

Bacteriology in its Relationship to the Oral and Nasal Cavities.

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II.

Conococcus or Diplococcus
Conorrhocae.

The Gonococcus or Diplococcus Gonorrhœae of Neisser (1879) (Fig. 14) is the causal agent of gonorrhœa. It has been found in urethral and vaginal pus, in the complications of gonorrhœa; bartholinitis, salpingitis, metritis, peritonitis, cystitis,

suppurative nephritis, and in gonorrheal ophthalmia. By its passage into the blood it produces a true septicemia (Hallier, Krause). It has been discovered, by Ghon and Schlagenhaufer, Thayer and Lazear, Rendu and Hallé, Berg, Lartigau, in the lesions of gonorrheal endocarditis, and by Petrone and Kammerer in the pus from gonorrheal arthritis. It is not usual to find it in the serous effusion of rheumatic joints as it rapidly disappears from the exudation, but it has been observed in cultures made from the granulation tissue in these situations, as it may remain alive for a long time in the articular tissues (Vaquez). Bressel has recognized it in a case of pneumonia developing during the decline of an attack of gonorrhea. The gonococcus has also been found in the cerebrospinal fluid from a case of cerebrospinal meningitis following an attack of gonorrheal urethritis (de Jong). In the early stages of

gonorrhea the gonococcus is usually the only micro-organism present, but later, on other micro-organisms, colon bacilli, pus-forming micro-organisms, diplococci, etc., associate themselves with or take the place of the gonococcus. These other micro-organisms may produce the various complications of gonorrhea, viz., the abscesses, various inflammations, endocarditis, etc.

The gonococcus is afforded ample occasion to infect the mouth by objects (the fingers, eating and drinking utensils, etc.), which have been contaminated by gonorrhoal discharges and exudates, coitus per os, cunnilingua, and the exudates of a gonorrhoal ophthalmia passing

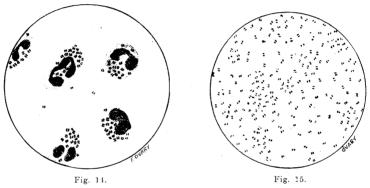


Fig. 14. Gonococcus in the Purulent Exudate of an Acute Gonorrheal Urethritis. X 1000.

Most of the Gonococci are seen as Cell Inclusions of the Leucocytes (Phagocytes).

Fig. 15. Meningococcus. From a Pure Culture. X 1000. (Modified from Kolle and Hetsch.)

through the nasal duct into the nose and thus into the pharynx and mouth. The attempts by Diday to infect the nasal mucous membrane by discharges from cases of acute urethritis proved absolutely futile.

Some writers claim the disease has been proved to exist in children. According to Dr. Victor Mucha, Docent at Finger's Clinic in Vienna, a case of gonorrhœal stomatitis has not been seen at Finger's Clinic during the past sixty years, and there has never been a case recorded in the obstetric clinic, pediatric clinic, or foundling asylum in Vienna.

The morphological resemblance of the gonococcus to the following organisms which are to be found in and about the mouth is extremely close, viz., Meningococcus, Micrococcus catarrhalis, Diplococcus pharyngis siccus, Micrococcus cinereus, Diplococcus pharyngis flavus I-II-III. All of these eight micro-organisms are Gram negative; therefore, it is only posible to differentiate them by cultural methods. From these facts it can be seen how difficult is the diagnosis of gonorrhea of the mouth.

In a recently reported case where an individual who had coitus per



os with one who had an acute gonorrhœal urethritis, shortly afterward developed a stomatitis, the diagnosis of gonorrhœal stomatitis was made. but apparently upon the sole basis and authority of the "post hoc ergo propter hoc."

The suspected gonorrheal stomatitis cases may be grouped as follows:

- (1). Cases reported before the discovery of the gonococcus.
- (2). Cases where only a microscopical examination was made and the exudate revealed a micro-organism which resembled the gonococcus in its morphological, staining, and grouping characteristics.
- (3). Cases where, in addition to the microscopical examination, cultures upon agar and serum agar, were made in order to find the suspected micro-organism, the findings proving the presence of an organism resembling the gonococcus.
- (4). Cases where, in addition to the microscopical examination and cultivation of the suspected micro-organism upon agar or serum agar, proving its resemblance to the gonococcus, the suspected micro-organism when grown, upon von Lingelsheim's sugar-litmus-serum-agar-media shows the essential characteristics of the gonococcus.

In the diagnosis of gonorrheal stomatitis we may invoke the "post hoc ergo propter hoc" theorem, but we must also demonstrate the morphological, staining, grouping, and ordinary cultural characteristics of the gonococcus, and then verify our conclusion by the use of the sugar-litmus-serum-agar-media of von Lingelsheim.

From a careful review of the literature on the subject and from personal investigations the writer is convinced, that the occurrence of gonorrhæa of the mouth has not been proved.

The Meningococcus of Weichselbaum (1887) or the Diplococcus Intracellularis Meningitidis (Fig.

spinal meningitis. It has predominated notably in recent epidemics. In certain cases of meningitis, the cerebrospinal fluid contained a microorganism of the pneumococcus type (Wolf, Netter). Jaeger and Heubner have studied in an epidemic of cerebrospinal meningitis a micro-organism, saprophytic in the pharynx, which is identical with the Diplococcus crassus, but sharply differentiated from the Meningococcus. Bonome has described a capsulated Gram positive Streptococcus, which is usually associated with the Meningococcus, as the casual agent of epidemic cerebrospinal meningitis, and Netter and others have found this microorganism in many cases of meningitis. The Meningococcus is found in the exudates of the meninges and in the cerebrospinal fluid; at times it passes into the blood of patients with meningitis (Salomon, Elser,

Sacquépée). Strümpell, Weigert, Albrecht and Ghon, Kiefer and Jundell have shown that a more or less marked rhinitis and pharyngitis is caused by the Meningococcus. According to Ostermann this rhinopharyngitis is contagious and disseminates the Meningococci. Some individuals suffering from a pharyngitis caused by the Meningococcus escape the meningitis, the meningitis only declaring itself when the Meningococcus, following conditions at present poorly determined, leaves the nose and pharynx to invade the cerebral meninges. During the course of an epidemic of cerebrospinal meningitis a careful examination of the nose and pharynx is of the greatest importance as a patient may be

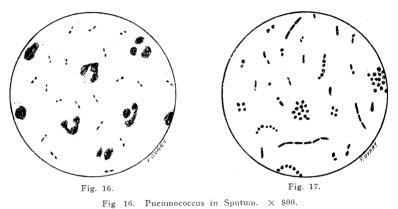


Fig. 17. Micrococcus Enteritis or Enterococcus of Thiercelin. (A Polymorphic Microorganism.) × 700.

the "carrier" of the Meningococci in his nose and pharynx and an active agent in the dissemination of meningitis, of which he is apparently free It is estimated by Bruns and Hohn that there are ten to twenty times as many "carriers" of the Meningococcus as there are persons afflicted with meningitis. The Meningococcus remains in the nose and pharynx on an average of fifteen days; but, it may remain several months.

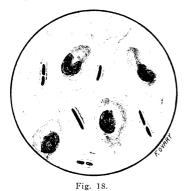
The following facts are among some of the most important bearing upon preventive medicine, viz.:

- (1). That pathogenic micro-organisms may invade the human body without causing disease and that they may be found in the body and dejecta of apparently healthy persons who have never had the disease caused by these micro-organisms.
- (2) That pathogenic micro-organisms may be found in the dejecta either of those who are convalescing from a disease or of those who have recovered entirely from a disease contracted months or even years before.



This discovery is the outcome of Pfeiffer's observations made upon cholera patients and apparently healthy persons who were exposed to cholera during an epidemic of Asiatic cholera in Russia in 1905.

An apparently healthy person in whom or in whose dejecta pathogenic micro-organisms could be found the German bacteriologists call a "Bazillenträger or Dauerauscheider." We call such a one either a chronic or latent "carrier" of pathogenic micro-organisms (Bacilluscarrier).



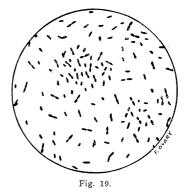


Fig. 18. Pneumobacillus in Sputum. ×1000.

Fig 19. Bacillus Lactis Aërogenes. X 700.

Micrococcus Catarrhalis.

During the last few years Pfeiffer, Bernheim, Petruchsky, Ghon and others have described the existence in certain lesions of the respiratory tract of a diplococcus similar to the Gonococcus in its

morphology and in that it is Gram negative. It is called the Micrococcus Catarrhalis, is frequently found in bronchitis, pneumonia and the sputum of febrile tubercular patients, and closely resemble the Meningococcus.

The Pneumococcus (Streptococcus Lanceolatus,

Pneumococcus.

Diplococcus Pneumoniæ, Micrococcus Pasteuri)

(Fig. 16) causes Lobarpneumonia (Talamon)

Fränkel, Weichselbaum) and a large number of the complications of pneumonia and certain other diseases. It is frequently found in the saliva (Pasteur (1881), Sternberg (1880), Fränkel (1886), Bürger), and habitually in the mucus from the tonsils of healthy persons (Bezançon, Griffon). Bürger has recognized it 34 times in 100 in the oral cavity of healthy individuals. Park and Williams have found the Pneumococcus (40 times in 80) in the mouth, nose and throat of healthy persons. Netter has found this micro-organism on an average of four times out of five in subjects who have had pneumonia and once in five



in those who never had the disease. He also states that during the course of the disease the saliva is infectious and that this condition disappears at the crisis to reappear on the fifteenth day. The Pneumococcus appears as an inoffensive parasite in the mouths of healthy persons: if, however, the resistance against micro-organism is weakened for some cause or other, it triumphs over the protective influence of the phagocytes and invades the lung.

Pasteur (1880) produced in rabbits a so-called "sputum septicemia" by inoculating them with normal human saliva. He named the microorganism found in this form of septicemia the "Microbe Septicémique du Salive." It was doubtless the Pneumococcus. The Pneumococcus always exists in the hepatized foci of lobarpneumonia either alone or associated with other micro-organisms, especially the Streptococcus, the Staphylococcus pyogenes and the Bacillus of Friedländer. It is met with in the rusty sputum, and certain forms of bronchopneumonia appear to be caused by it. It may pass into the blood thereby causing neighboring or distant complications, at times, of a suppurating character. Pneumococcus produces a greenish, thick, viscid pus, very rich in cellular elements and the inflammatory processes caused by it have a tendency to heal. The Pneumococcus is sometimes a causal agent of the following complications of pneumonia, viz., a fibrinous, or purulent pleurisy or pericarditis, a vegetative or ulcerative endocarditis, meningitis, nephritis suppurative parotitis, suppurative arthritis, peritonitis, metritis and abscesses. But the complications of pneumonia may be caused by other micro-organisms of suppuration. It is possible for the Pueumococcus to produce as a primary disease, without any pneumonia, a fibro-purulent pleurisy, a sero-fibrinous or suppurative pericarditis (Osler, Banti), conjunctivitis, keratitis, suppurative otitis (Zaufal, Netter), ulcerative endocarditis (Jaccoud, Netter, Weichselbaum), pharyngitis, simple or membranous (Cornil, Jaccoud, Menetrier, Rendu, Boulloche), peritonitis and suppuration of the bile passages. It causes a large number of cases (primary) of meningitis of the cerebrospinal type. Netter has found the Pneumococcus in 18 out of 31 cases of meningitis which were not accompanied or followed by pneumonia, and Foa and Landouzy have also observed the Pneumococcus in certain types of cerebrospinal meningitis. Marchoux has described an epidemic of meningitis of the cerebrospinal type with pneumonia among the negroes of Senegal; the meningitis caused by the Pneumococcus occurring at the same time as the pneumonia.

Diplococcus of Infectious Parotitis.

A Diplococcus has been found by Laveran and Catrin in the blood, parotid gland and testes of 62 out of 92 patients suffering from infectious parotitis (Mumps). In 2 of these 92 cases they found the



diplococcus in the exudate obtained from the arthritis. Korentschewsky obtained this micro-organism in the exudate from the parotid gland in 28 out of 29 cases examined, and in the blood in 8 cases out of 32. Isabella Herb succeeded in isolating a diplococcus from a case of mumps and makes the following suggestive statement: "Inoculations of suspensions of the diplococcus into Steno's duct in the monkey and in the dog produce an acute, uniform enlargement of the parotid gland, accompanied with some slight fever. In the dog this enlargement is the result of an infiltration that consists largely or mononuclear cells, and is accompanied

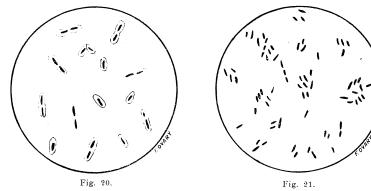


Fig. 20. Bacillus of Rhinoscleroma. \times 1000. (Modified from Besson.) Fig. 21. Bacillus Pyocyaneus. \times 800.

with a general increase in the mononuclear cells in the blood, as well as a distinct rise in the opsonic index with respect to the diplococcus."

The Micrococcus Enteritis, Enterococcus of Thierce.in (1889) or Streptococcus Enteritis of Escherich (1889) (Fig. 17) is a saprophytic microorganism which may become pathogenic. It is met

with in the digestive tract, the mouth, nose, pharynx, under the skin and in the vagina. It plays an important rôle in enteritis in the adult and child, in infections of the gall bladder and biliary ducts; produces complications in typhoid fever and tuberculosis and may be the cause of meningitis and bronchopneumonia.

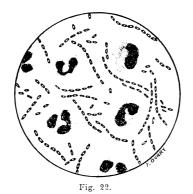
The saliva of many healthy individuals (according to Netter, 4½ per cent.), contains the Pneumobacillus of Friedländer (1883) (Fig. 18) which, if not the causal agent of pneumonia as Friedländer believed, nevertheless plays an important part in pathology. It is met with in bronchopneumonia, meningitis, pleurisy, pericarditis, and peritonitis; causes septicemia (at times hemorrhagic), and many forms of suppuration, such as stoma-

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titis, parotitis, otitis, frontal and maxillary sinusitis, dacryocystitis, orchitis, epidydimitis, perineal abscesses, endometritis, and some forms of pseudomembranous pharyngitis (Nicolle, Hebert), and may be associated with the Bacillus diphtheriæ. It has been found in the air, dust and certain waters.

Bacillus Cactis Herogenes

The Bacillus Lactis Aërogenes (Escherich) (Fig. 19), a species of Pneumobacillus (Denys and Martin, Grimbert and Legros, and Bertarelli), is found in the air, soil, water and feces and produces



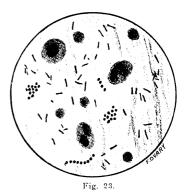


Fig. 22. Streptobacillus of Ducrey and Leucocytes, in the Exudate from a Chancroid. X 1000.
 Fig. 23. Bacillus of Diphtheria, Leucocytes, Erythrocytes, Streptococci, and Staphylococci in the Exudate of Diphtheria. X 700.

fermentation of milk. It appears to cause enteritis in nursing infants and plays an important rôle in infections of the genito-urinary tract.

Bacillus of Rhinoscleroma.

The Bacillus of Rhinoscleroma (Fig. 20), discovered by von Frisch, has been seen in pharyngeal and nasal lesions, and Rona has found it in the submaxillary lymph nodes complicating a case of This microorganism is closely related to the Pneumo-

rhinoscleroma. bacillus.

> Bacillus of Ozena.

The Bacillus of Ozena (discovered in the mucous secretions in cases of ozena by Löwenberg), can be identified with the Pneumobacillus, and is no longer considered the causal agent of ozena.

Bacillus Pyocyaneus. The Bacillus Pyocyaneus (Gessard, 1882), (Fig. 21), is the cause of the blue or green stains in surgical dressings quite frequent before the days of antiseptics, but rare to-day. It is usually associated,



in the "blue or green pus" with other micro-organisms of suppuration, and may invade the tissues of the body when a pre-existing disease offers a port of entry.

Lartigau says: "The Bacillus Pyocyaneus, like many pathogenic micro-organisms, is occasionally found in a purely saprophytic rôle in various situations in the human economy. It has been found in the saliva by Pansini, in sputum by Frisch and in the sweat by Eberth and Audanard. Abelous demonstrated its presence in the stomach as a saprophyte. Its existence in suppurating wounds has long been known and Koch early detected its presence in tuberculous cavities, regarding it as an organism incapable of playing any pathological rôle."

There are those who hold that even if this bacillus is found in the purulent exudate from open wounds and certain cavities (nasepharynx and maxillary sinus), its action is only localized and it does not cause a true infection. There are also those who believe the infection by the Bacillus Pyocyaneus is but an agonal or terminal one.

The Bacillus Pyocyaneus has been found in otitis media, pseudomembranous pharyngitis, bronchopneumonia, enteritis, appendicitis, diarrhœa of infants, colitis, urinary infections, cutaneous lesions, meningitis, the blood of persons suffering from chronic colitis and organs of typhoid patients. A general infection with this bacillus is described a number of times.

The micro-organism is present in dust, water and the soil. Besson reports that the waters of Tunis contain it and that suppurations and grave complicating infections are caused by it in that country.

Jordan states that: "On the whole, there is no doubt that under certain conditions the Bacillus Pyocyaneus is pathogenic, even gravely so, for man."

Streptobacillus of Ducrey.

The Streptobacillus of Ducrey (1889), (Fig. 22), found in the pus of chancroids, is usually associated with the Staphylococcus, Micrococcus tetragenus, Gonococcus, and Bacillus cutis communis of

Nicolle. It is to be seen between the fibrils of the connective tissue of the dermis, and does not enter the cells or blood vesse's. As repair of tissue takes place it appears within the leucocytes and its virulence seems to diminish as cicatrization progresses. The inoculation of man with pus from chancroids or with cultures of the bacillus produces a typical chancroid. Extragenital chancroid is very rare and buccal or pharyngeal still rarer. Aside from the doubtful cases of chancroid of the mouth reported by Ricord. Diday and Kaposi, there are some which cannot be doubted, among which are two cases recently reported by Droulle and Gaucher. The most frequent situation in or about the mouth for the

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chrancroid which may be simple or multiple, is on the tongue anterior pillars of the fauces and soft palate.

Bacillus Diphtheriae. The Klebs-Löffler-Bacillus (1883-1884), the Bacillus Diphtheriæ (Fig. 23), is found in man in the false membranes of diphtheria (pharyngeal, nasal, laryngeal, cutaneous diphtheria). It may pro-

duce a pharyngitis without a false membrane, in which case a bacteriological examination must be made to diagnose the case. In every case where diphtheria is suspected a cultural and microscopic examination should at once be made. As a rule, this micro-organism is found only on

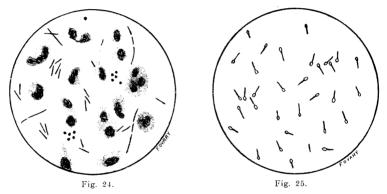


Fig. 24. Bacillus of Tetanus, Leucocytes and Cocci in a Purulent Exudate from a Guinea Pig Inoculated with Garden Earth. \times 700.

Fig 25. Bacillus of Tetanus Containing Spores. X 700.

the mucous membrane or in the false membrane, it rarely invades the tissues of the body, but it has been found in the blood and viscera of cases coming to autopsy. (Babès, Spronck, Paltauf, Frosch, Kutscher, Barbier and Tollemer, Nowak.) It has been frequently encountered in the foci of bronchopneumonia secondary to croup (Löffler, Kutscher).

The presence of the Bacillus Diphtheriæ has been determined in the mouth and nasal cavities of those—"carriers"—who had diphtheria. sometimes several weeks after recovery. Although denied by several bacteriologists, Besson states, that numerous observations seem to prove the existence of the Klebs-Löffler bacillus in the mouths of healthy persons—"carriers"—who have never come in contact with those known to have been suffering from diphtheria.

In 1884, about the same time when the Bacillus Diphtheriæ was discovered, that keen student of medicine, Abraham Jacobi, recognizing that diphtheria often presented itself in such a mild form that its diagnosis was difficult or impossible, said:



"The symptoms are often but few; a little muscular pain and difficult deglutition are, perhaps, all that is complained of; women will quietly bear it; men will go about their business. There is as much diphtheria out of bed as in bed; nearly as much out of doors as in doors. Many a mild case is walking the streets for weeks without caring or thinking that some of his victims have been wept over before he was quite well himself. Diphtheria is contagious. Severe forms may beget severe forms or mild forms. Mild cases may beget mild or severe cases."

The Bacillus Diphtheriæ may exist for a long time outside of the body. Park, Wright and Emerson have observed it in the dust of wards



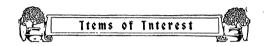
Fig. 26. Bacillus of Tetanus Showing Flagella. Highly Magnified. (From a Fhotomicrograph Taken by Tavel.)

where diphtheritic patients were treated and on the clothes of their attendants; and Abel has shown it to be on toys which had been in the hands of a child who had diphtheria.

Pseudo-Diphtheria Bacillus. There is found in the mouths of healthy persons (72 in 362 children examined by Graham-Smith) a non-virulent micro-organism, the Bacillus of Hoffmann or Pseudo-Diphtheria Bacillus. It has been seen

in cases of non-diphtheric pharyngitis. Löffler, Hoffmann and Spronck consider it a distinct micro-organism, whereas Roux and Yersin insist that the Pseudo-Diphtheria bacillus is only an avirulent form of the Klebs-Löffler bacillus.

German bacteriologists have grouped together **Corynebacteria.** several bacilli, which they call the Corynebacteria, characterized by intra-protoplasmic granules, clublike swellings on their ends and the property of producing ramifying forms in old cultures. These are: (1) Corynebacterium Diphtheriæ (Bacillus Diphtheriæ). (2) Corynebacterium Commune (Pseudo-Diphtheria Bacillus or Bacillus of Hoffmann). (3) Codyne-



bacterium Conjunctivæ (Bacillus Xerosis). (4) Corynebacterium Mallei (Bacillus Mallei).

Tetanus in man may follow any wound which has been infected with the Tetanus Bacillus (Nicolaier, 1884). (Figs. 24-25-26). In the absence of a break in the integument, a so-called spontaneous

form of tetanus may occur. This is due to the infection coming from the intestinal tract (Susse), or to the Bacillus Tetani having entered the tissues of the body by a wound long since healed. It has been shown (Vaillard and Rouget) that spores of this micro-organism when introduced into the tissues can remain dormant for a long time and later by germinating and producing the specific micro-organism, cause an apparent spontaneous tetanus. The spores of tetanus are widely scattered. When a guinea pig is inoculated with garden earth, mud from the street or slime, it generally dies of tetanus or acute experimental septicemia. This mocro-organism is met with in the intestinal tract and feces of a large number of animals. All species of domestic animals may be attacked by this disease.

Pseudo-Tetanus Bacillus. A non-pathogenic micro-organism resembling morphologically and culturally the Bacillus tetani has been found in earth and in meat infusions. Travel found in the intestines and, in great num-

bers, in appendicitis an anaërobic micro-organism so closely resembling the Bacillus of tetanus that he called it the Pseudo-Tetanus Bacillus, but which is not pathogenic for mice, guinea pigs or rabbits.

I am indebted to Dr. Francis O'vary for the drawings of the cuts.





Success with Porcelain Jacket Crowns.

By Albert W. Strecker, A.B., A.M., D.D.S., Philadelphia, Pa.

The writer of this paper, while not treating of new or original matter, nor claiming any new methods, simply desires to call the attention of the profession to several cases occurring in his practice, which because of the various conditions surrounding them could not have been so satisfactorily improved by any method as by the porcelain jacket crown.

A lower right second molar. The tooth had a well-constructed and well-adapted gold crown, which Case T. had been placed in the mouth about three years prior to patient's coming to the writer for treatment. Owing to the gum swelling, bleeding and becoming very tender, the crown had been removed and gums treated. After a healthy condition had been obtained, the crown was again placed in position. After about two weeks, the old symptoms appeared, slightly at first, becoming more severe from week to week. This condition occurred three times. Patient at last consulted a physician and was referred to me with the following memorandum: "If condition cannot be cured, remove tooth." It was decided to replace the gold crown with porcelain. Three different makes of all porcelain crowns were tried, but owing to difficulty in securing a perfect adaptation had to be abandoned. As gums would not tolerate gold, a cast base could not be employed. Finally, the porcelain jacket crown was decided upon. The crown of the natural tooth was trimmed back about 1/32 of an inch below gingival margin, giving a raised base of about 1/8 by

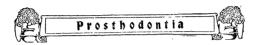
1/32 inch in width, being about 1/16 of an inch high. An impression was taken in plaster and cast in fusible metal; the impression of occluding teeth and bite obtained; case was mounted on an articulator, cast separated, model coated with a thin film of spermaceti, tooth built up of porcelain powder cast slightly heated and tooth removed, placed in furnace and biscuited. Crown was again placed on model, built just a trifle larger than necessary, placed in furnace and baking finished. Tooth was now tried in place and found to be just right; cemented to place. After three years, gums have remained normal, and there has been no return of any pathological conditions.

Mrs. S——. A severe case of pyorrhea caused a general recession of gums; a copious discharge of pus was found; mouth was treated, a cure obtained, with the exception of gums around a gold crown. After several months spent on this tooth, without any marked improvement, it was decided to remove gold crown and replace it with a jacket crown. This was done, and after a few weeks gums responded very nicely. Two years from date of dismissal of patients, no further trouble has occurred.

Mrs. R——. A porcelain crown with cast base had been inserted on upper right first molar. When case came under my care, gums had receded and tooth was causing some annoyance. Removed crown and replaced with an all-porcelain jacket crown; gums were treated and brought to a normal condition. After three years, crown is in position and gums are in an excellent condition.

Miss G——. Patient very nervous and suffering from anæmia, gastric trouble and subject to severe headaches; a constant presence of neuralgia. Found mouth in a very poor condition; pyorrhea was very much in evidence especially marked in region of two molars, each having a gold crown. Crowns were removed and treatment for pyorrhea instituted. After some progress in overcoming pyorrhea had been made, porcelain jacket crown was placed over molar. A period of three years and six months has now passed, and mouth is still in an excellent condition, stomach trouble and anæmia have disappeared, and patient has no further neuralgia or headache.

Miss F——. A young lady about 20 years old. A gracious and otherwise more than pleasing appearance was spoiled by her bite being entirely too close, giving her a decidedly heavy lip, making her entire expression gross. Upon examining mouth, found in upper jaw we had seven teeth to work on, namely, two centrals, one lateral, one cuspid-shaped tooth on



both sides, in region usually occupied by bicuspids, and two molars. The molars were badly pitted on occluding surface also to some extent decayed.

In the lower jaw found ten teeth, the four anterior teeth being merely small cones, extending beyond gingival margin of gums about 3/16 of an inch; the cuspids were in position and in good condition. Next, we had a bicuspid on either side, being a close resemblance to cuspids; on the left side the next tooth was a bicuspid of good shape, this being the last tooth on this side. On right side, a poorly developed and poorly shaped molar, the occluding surface being badly pitted and decayed; this was the last tooth. Only seventeen teeth had been erupted, none having been extracted.

Bridgework was inadvisable, as the teeth were not firm enough to withstand the strain of any additional stress; it would have necessitated the extraction of the four lower anterior teeth, and it was very questionable whether the gums would have tolerated the gold being forced under gingival margins. The first step was to open bite. This was accomplished by placing gold inlays in molars and bicuspid. By this method we secured an opening of almost half an inch, eliminating the heavy appearance of lips, changing the whole facial expression. The next step was to make jacket crowns for the three upper and four lower anterior teeth. Models were secured and, after giving them a very heavy coating of spermaceti, they were built around and up of porcelain body. Shells were then removed and biscuited, replaced on models built up to proper height and contour, then finished and cemented to place. Patient was dismissed for two weeks, to see if porcelain jacket had the proper strength for service. After this time, patient returned and a plate was made for upper jaw, carrying four teeth.

After three years, case has proven a success far beyond hopes, patient is delighted, and the teeth carrying jacket crowns have grown firmer. After a careful examination of case, can see no reason (as crown has now served over three years) why crowns will not remain satisfactory for an indefinite period.



A Cooped Arch and Appliance for Attachment.

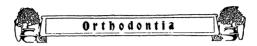
By RAY D. ROBINSON, D.D.S., Los Angeles.

The appliance consists of a delicate spring arch (Fig. 1), bent to conform to the individual dental arch to which it is to be applied, with loops extending toward the root or toward the occlusal end, as may be found convenient, placed in advantageous positions; and an attachment consisting of a seat (Fig. 2) soldered to a plain band on the tooth, and a square hollow block of metal, the outside measurement of which is the same as the inside of the seat, and the bore of which is equal to the diameter of the arch wire (Fig. 3).

The seat has a flat base and parallel walls extending at right angles to the base, the walls being 50 per cent, higher than the width of the base which allows sufficient to bend over the fourth side of the block, thus inclosing it in a square tube which accurately fits it (Fig. 4).

In constructing and applying this apparatus, the bands with seats attached, as indicated in Figs. I and 2, are first made and cemented to the teeth, using the form of band on the anchor teeth shown in Fig. 5. The requisite number of blocks being loosely placed on the arch wire a long block, as shown in Fig. 5, is soldered to one end of the arch, which is then put into place and bent in such a way as to bring the arch into the adjacent seat, a loop being formed if desired.

One of the blocks is now brought to the proper place on the arch wire to engage in the seat. The arch is then taken from the mouth and the block soldered. The arch is again placed in the mouth and again



bent to bring it into alignment with the next seat, it being understood that loops are formed between such seats as is deemed necessary for the development of force and for the directing of the movement of the teeth. This operation is continued until all the teeth requiring movement have been engaged, when another long block is soldered to the other end of the arch to engage the other anchor band.

After polishing, the arch is next put into place and the extensions of the walls of the seats are bent over the four sides of the blocks as shown in Fig. 4.

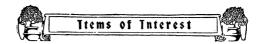


Fig. 1.

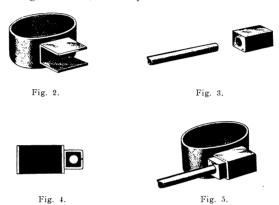
It will be readily seen that the attachment between the arch and the tooth is absolutely rigid, and any movement of the arch wire will in time be registered in the tooth.

In that form of appliance, having tubes soldered to the bands parallel to the long axes of the teeth, and posts soldered at right angles to the arch to engage in these tubes, such absolute accuracy of adjustment in soldering is necessary as to make the appliance efficient only in the hands of the most skillful. It must also be appreciated that as the planes of the posts and the arch are at right angles to each other, any inaccuracy in alignment will be magnified in the tooth movement. Given accurate fitting blocks inaccuracy in constructing and adjusting this new appliance is practically impossible. The long axes of the arch wire and the block not only lie in the same plane, but the arch wire actually passes through the center of the block, eliminating all possibility of error in alignment.

As the block can both rotate and slide on the arch wire, it is easy to place it in the exact position required by forcing it into the seat. Once it is in its proper place it is pinched slightly with pliers to prevent its becoming misplaced while being carried to the flame for soldering. Thus it will be seen that it would require the grossest carelessness to make an error in alignment.



There should be no trouble encountered in bending the arch wire into the desired form. The largest wire used is 24-gauge, B. & S., and very frequently 26-gauge wire will be found sufficiently heavy. As the first block is soldered before any bending is necessary, and as it holds one end of the wire rigidly in its proper position, and as the bending can be done in the mouth, the writer can see no reason for either error or difficulty in bending the arch, even by those of mediocre ability.



Cooth Movement. A little study of this appliance will convince the most skeptical of its efficiency. It will be seen that by springing a loop open, force will be brought to bear on the teeth adjacent to that loop. As, for

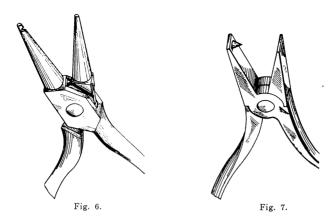
instance, opening the loops in the incisor region will exert force in the direction necessary to widen the arch as far as the cuspids. If it is found necessary to carry the incisors labially, the loops in the cuspid bicuspid and molar regions will be sprung open. If it be found necessary to carry the incisors on one side mesially, and those on the other side distally, without carrying them labially, as frequently happens, through the premature loss of the deciduous cuspid, it can be readily done by opening a loop placed over the cuspid region where the space is to be made and closing one over the opposite cuspid region. If it be found necessary to widen the arch in the bicuspid and molar region without widening the incisor and cuspid region it can be accomplished by slightly opening the seats on the incisors, allowing the blocks to slide distally through the seats, and then opening the loops in the incisor region. It will be readily seen that the force generated by opening these loops will be exerted in the desired direction and place.

If a movement tending to throw the apex of the root buccally or labially is desired, it can be secured either by bending the adjacent loops



in the desired direction or by taking the arch from the mouth, heating the block, and while hot turning it in the desired direction. When again placed in the mouth it will be found necessary to spring this block to place. When the edges of the seat have again been bent over the block it will exert force that will cause the apex to move in the desired direction.

If it be found necessary to move the apex mesially or distally without disturbing the relative position of the crown it can be accomplished by



bending the adjacent loops in the directions indicated. It will be readily seen that more than one of these movements can be accomplished at the same time.

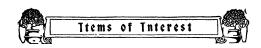
In fact, any desired movement of any tooth or teeth can be accomplished without disturbing other teeth which may be in their proper places. Two of the principal reasons for this are the facts that the attachment between the tooth and arch wire is absolutely rigid, and, second, the force necessary to the tooth movement is generated at the point where it is applied.

The force being that of a spring and generated from small delicate wire loops is not violent in its action, but slow and delicate, although none the less positive. Being of this character the result resembles a physiological rather than a pathological action, causes the irreducible minimum of pain and requires a shorter period of retention.

The force is more directly applied, is longer continued, is more easily controlled and causes less annoyance than that generated by any other appliance ever brought to the writer's notice.

It is obvious that a triangular block, or any angular or oval or round block, with a pin raised on one side, placed in appropriate shaped seats, would accomplish the same result. It is also obvious that the converse

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of this is true. That is, the same result could be accomplished by placing the seat on the arch wire and the block on the band.

The attachments could readily be used with the old form of arch, depending on the screw force, but the writer finds the force generated by opening the loops to be of such a character as to produce better results with less annoyance.

Two special pliers will be found convenient in handling this appliance. One shown in Fig. 5 has a sharp projection in one jaw, and is used to indent one side of the seat when it is desired to prevent the block from sliding in the seat.

The other, a pair of round-nosed pliers, Fig. 6, has a notch cut in one jaw near the end. This plier is used to spread the loops. The notch is placed over the convex side of the loop to prevent slipping, and the other jaw is then forced into the loop, thus spreading it.

Failure can follow an attempt to use this appliance only if the blocks and seats do not fit accurately. A piece of metal, bent to approximately the form of a hollow square with a block that fails to fit, will not obtain the desired results.

The inside angles between the base and the sides of the seats must be sharp and clear, not rounding, so that the block will rest firmly on the base, and the outside measurement of the block must be the same as the inside of the seat.

At first the writer had a great deal of trouble in securing proper fitting seats and blocks, but finally found it possible to get them made in a way that produces mechanically perfect parts.

After the appliance is once adjusted it is not necessary to see the patient oftener than once in two or three weeks, and it will often be found that where more than one loop is opened to accomplish the same result the force will continue for a month.

Bone Development as a Result of Mechanical Force. Report on Further Creatment in Attempting the Opening of the Intermaxillary Suture in Animals.

By Martin Dewey, D.D.S., Kansas City, Mo. Read before the American Society of Orthodontists, Chicago, 1913.

The question of bone development as a result of mechanical force, and the opening of the intermaxillary suture, like some other questions, have been before this society a number of years. It will also be a number of more years before it will be satisfactorily settled to all.



This slide (Figs. 1 and 2) shows the relation of the bone development to the tooth germ, and the intimate relation which exists between the tooth germ and calcification bears out the fact that bone develops wherever a tooth erupts. The theory has been advanced at various times



(Fig. 1. (1) Tooth Germ. (2) Bone. (3) Meckel's Cartilage.

of the possibility of moving the teeth so far that you move them beyond their osseous support. That is a condition which is not very liable to happen, and which I have been enabled to produce experimentally, because I have moved the teeth over the width of the alveolar ridge. I have moved a single tooth, and immediately after movement there was as much bone on the outside (labial side) of it as there was before it was moved.

This next slide shows the manner in which bone develops (Figs. 3 and 4). You see arranged the spicule of bone, and around it the osteo-blasts, which are not far removed from the bone. These spicules of intermembraneous bone are thrown out into the connective tissue. The osteoblasts continue to develop bone, and the direction which the development takes depends upon the force exerted on the growing parts.



In the development of the bones (Fig. 5) in the region of the sutures, the bone grows toward the suture, but does not unite by a boney union on the right and left sides. Sections of adults show connective tissue between the two halves of the bone. In moving the bones apart the

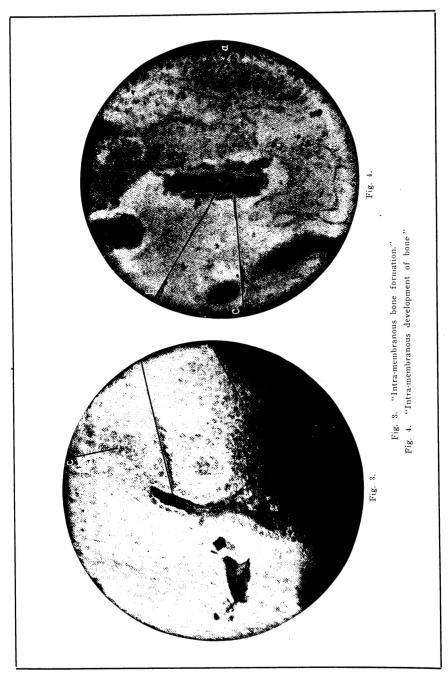


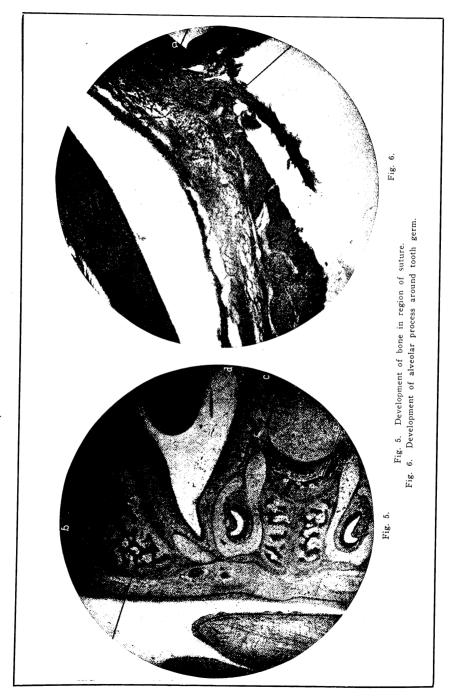
Fig. 2. (1) Tooth Germ. (2) Bone.

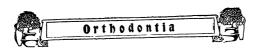
osteoblasts from the pre-existing bone fills in the space made by the movement.

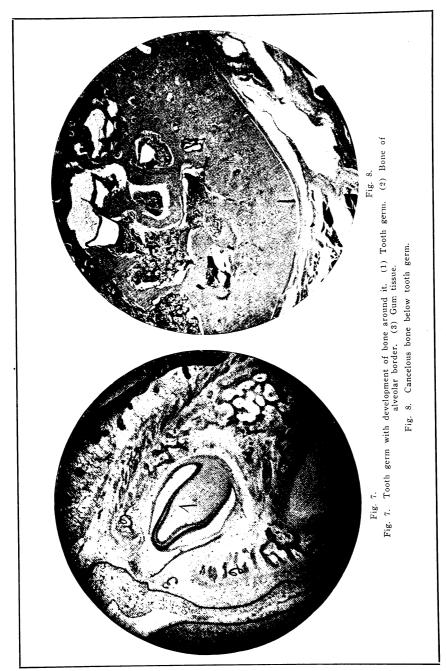
The growth of the bone as related to the development of the teeth is shown, and the alveolar wall grows up along the side of the tooth, and you have one island of bone piled upon the other (Fig. 6). You have osteoblasts on the outside of the bone, which builds the bone as the tooth pushes forward (Fig. 7). Taking another section we see how the character of the bone has changed, and instead of compact bone we now have cancelleous bone with large medulary spaces in it (Fig. 8). Great areas of absorption occur, and as you go farther down, at the bottom, you get development of the muscle which is attached to this side, and this dense area as it builds out will be cut out by absorption and large spaces develop (Fig. 9).













Experiments in Opening the Suture.

As to the experiments which were made in attempting to open the suture,* the criticism was raised last year, as to the dogs, and that some X-rays should have been made of the animals. It is not a difficult proposition to X-ray a dog.

Fig. 9. Thick bone for the region of the mylo-hyoid muscle.

Here is a radiograph (Fig. 10) made at the time the appliance was put on the dog, March 15th. The measurements across the tips of the canines are 15/20 of an inch. After the appliance was put on, another radiograph was made March 17th. This radiograph (Fig. 11) shows evidence of having opened the suture. It is interesting here to note that you have the right and left palatine foramina. You have the right and left half of the superior maxilla as it lies in the dog and the suture extending up to the premaxillæ. On March 23d, which is six days later than Fig. 11, you have an increased weight of 3/20 of an inch. You had this condition here (Fig. 12). (Illustrating.) Here is the rim here, alveolar process and edge of suture. Instead of the suture being open,

^{*}See "The Development of the Maxillæ," with reference to opening suture. ITEMS OF INTEREST, March, 1913.



you have a condition which in this picture shows black (Fig. 13). These are the original lines which represent the right and left halves of the maxilla. Notice how the anterior palatine foramina are situated, because the radiograph film was put to the right of the mouth. On April 10th (Fig. 14) you find you have practically the same condition, because I

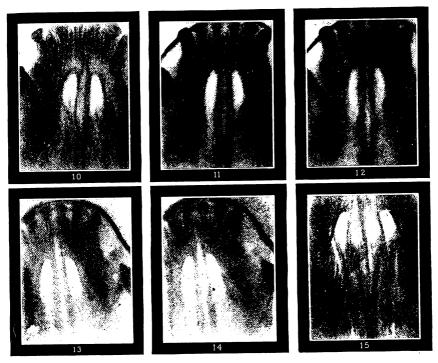


Fig. 10. Made before appliances were put on. Made March 15, 1913.

Fig. 11. Made March 17, 1913.

Fig. 12. Shows a tooth movement of 3/20 inches over Fig. 10. Fig. 15. Note how palatine foramina have separated and dark lines where suture was.

was out of the city at that time, and when I got back the whole bunch of dogs had their appliances off. But you have a loss of the little articular space which you had before, and it is filled up with something. You can still follow these (the palatine foramina) lines. The distance between the teeth is exactly the same as before. April 17th (Fig. 15) there is a different appearance. You have the anterior palatine foramina farther apart. The dark lines and the lighter areas are easily seen. You notice how the border of the suture curves; this begins to curve because the anterior palatine foramina are opposite the canines. Men say you

cannot spring the bones. We are actually springing the bones, changing the roof of the mouth, and the arch of the mouth becomes lower and the whole thing presents a different appearance. You can see this is opened up in a V-shape exactly, but the opening is across between the

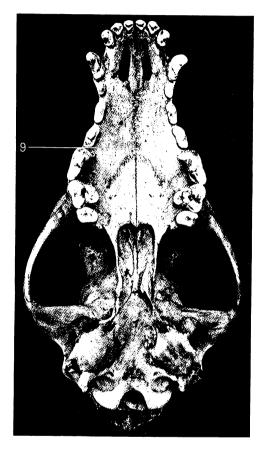


Fig. 16. Skull of dog killed after suture had been opened. (9) Posterior of opening. This dog was not X-rayed, but was used in the 1912 experiments.

two canines. This is opened away back in the region opposite the premolars, as is shown by the photograph of a skull after killing dog (Fig. 16).

Here is a radiograph, April 24th, in which the teeth have been moved (Fig. 17), when there had been an increase of 4/32 incres across the base of the teeth. The dark line which you see is the nasal septum, which



has not been disturbed, and the lighter areas which you see on both sides are bone which has developed between the two halves of the maxillæ. (Indicating.) With the dark line disappearing, it shows the whole bone is actually being absorbed, so that you have almost the same density across the suture as before. The whole suture has not been rebuilt here, again, but simply turned down and built over.

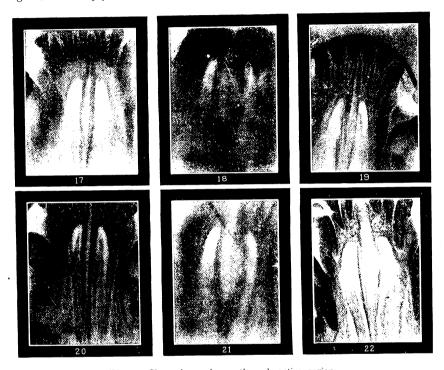


Fig. 18. Shows bone change through entire region.

Fig. 19. Showing parts before they have been moved.

Fig. 21. Showing springing of body of maxillæ in region of palatine foramina.

Here is a radiograph taken April 30th. At that time you had an increase. The tips of the canines were 22/32 of an inch (Fig. 18) and the base 24/32 of an inch. You will notice the anterior teeth are all together, but the roots have separated a great deal because stress has been transmitted from the canine. The anterior palatine foramen has become separated, new bone has been developed and the new bone does not stop the ray the same as the old bone. Why do the crowns of the teeth stay together with the roots separated so far? They stay together because the histological structure of the gum tissue of the carnivorous animal is

very dense. It is full of inelastic connective tissue fibres. The fibres running up under the gingival margin of the gum being inelastic have held the crowns together so that they cannot spring apart. There is bone development around the canine seen here. (Indicating.) You have developed all through the region just as great an increase of bone around

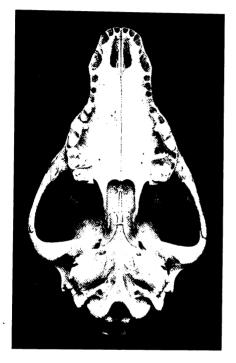




Fig. 23.

Fig. 94

Fig. 23. Skull of dog which did not have regulating appliances on. Dog of same breed as
Fig. 23. Weight of this dog, 27 pounds. Notice shape of palate.

Fig. 24. Skull of dog which had appliance on teeth. Canine teeth were moved 26/36 of inch. Weight of dog, 27½ pounds.

the teeth, but the external plate of the tooth is developed just the same as the other.

Let me show you another radiograph taken March 21st (Fig.19), and you can see the opening of the dark area stops. You see, the roots of the teeth are decidedly different from those you had on the screen, because these have not been removed. Here is the anterior foramen together.

Here is one made April 10th. Note the difference between the one



made April 21st and this. The width of the teeth when we began to work on them was 26/32 of an inch at the base. The anterior palatine foramen had separated (Fig. 20). The gap is wider. You see, the thing has begun to be loose. Bone has developed in there. There is a difference here between 33/32 of an inch and 26/32 of an inch. The dark line which you see is the perpendicular base of the nasal septum and the nostril The whole suture is closed.

When you have attempted to open the suture, have expanded the arches, and then have cut in there to see whether the suture is open or not, you find it closed. But it has been opened; you have spread the connective tissue in the suture so that the osteoblasts can run through and fill the space.

This radiograph was made April 24th. There was a change from 20/32 of an inch to 22/32 of an inch.

Here is one made May 1st. It shows a difference of 4/32 of an inch. As a result of the stress applied to the teeth, bone has developed, and developed in response to the force exerted by the appliance. The roof of the mouth has changed in shape and structure as the direction

of the spicule has changed.

Here is one made June 3d (Fig. 21), and at that time you have an increase over the original measurement of 20/32 of an inch. In the first you see the anterior palatine foramina closed together. Now they are far apart. The canines are far apart, too, and the whole structure is The whole thing has been reabsorbed as the result of menew bone. chanical stimulation.

Here is a radiograph made of a skull which had had the suture opened. Instead of an open suture (Fig. 22) you have a closed suture. You get spreading of the bones which unquestionably can take place resulting in mechanical stimulation of osteoblasts which closed the space. Cutting through dense tissue is no evidence that the suture has never been opened. The bone develops so rapidly that unless you have kept close track of your cases you might think the suture was never opened. Often I have seen men who were enthusiastic as to the opening of the suture claim that the two halves of the nasal septum were the edges of the suture. As I have shown in dogs, the bone will fill in the suture so that the edge of the old suture disappears.

Is there any Advantage in Opening the Suture?

The question arises, what is the practical significance of this? Does it do any good to open the interpremaxillary and the intermaxillary sutures? Admitting it can be done on dogs, the question arises, do you gain any advantages by doing that over moving the teeth gradually? I am of the belief you do not, because

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observation of these dogs and of the skulls shows that bone has developed all around the teeth, and you have this development as a result of mechanical stimulation. You can put appliances on the teeth in a youngster and widen the arches, and the spicules of the bone which grow in between the suture are the result of mechanical stimulation. The development of the whole alveolar process is the result of mechanical stimulation, and with each individual tooth as it erupts the alveolar process follows it. By moving the teeth you will get the development of the bone all around, and that development of the bone occurs more readily in a young child, but it will occur also in an adult if properly treated. As you spread the arches apart you will get development of bone in between the two halves but the development of bone as advocated is not going to maintain the expansion of the dental arch. Bone develops all around the teeth, as was shown by the development of bone around the first molar when the appliance was placed on the canines.

The development of bone as the result of an attempt to open the suture has been proven, and the influence which bone has on the retention of teeth is another problem.

Discussion on the Paper of Dr. Dewey.

Dr. O. W. White, Detroit, Michigan.

I do not feel capable of opening the discussion on Dr. Dewey's paper, for the reason that I had no means of knowing what he was to talk about; neither did I see the slides, which are very beautiful.

I think, though, if we knew the histological structure of the bone tissue, which Dr. Dewey shows developed during spreading of the suture, we would find it very different in cellular formation from the surrounding bone tissue. Dr. Oppenheim, of Berlin, has carried on quite extensive research work on monkeys, and he shows in tooth movement a very marked difference in the bone formation, little spicula of the bone developing at right angles to the tooth, instead of circular or horizontal. Of course, he did not move the teeth as slowly as Dr. Dewey. He consumed forty days in moving teeth, which was a rapid movement. Oppenheim found when he removed the pressure, the new tissue was resorbed rapidly, tissues returning to normal. So I think, probably, the tissue developed in these sutures of dogs and monkeys, are very similar. Dr. Dewey should give us the histological structure of this bone and if he did so we would probably see a great difference in the formation. In working on normal arches and tissues in the experimental animals, the conditions are not similar to abnormal and the results are of very little clinical value under such circumstances.



Dr. R. Ottolengui, New York City.

I was very sorry when I saw my name on the program to discuss this paper, and more so now. But I want to say, that it does not seem to me that the evidence presented is entirely convincing that

those sutures have been moved apart, and for the reason that, in the first place, as I recall the illustrations, those that were most apparent were those in which the sutures were open, so one could hardly say he opened the sutures when they were already open. In the second place, the deductions depend upon the view in which he pictures the arch, which, rightfully represented, shows the borders of the suture are farther apart, and in between them lies new bone. But, it seems to me, the pictures which Dr. Hawley showed two years ago are almost a facsimile of this and his deduction was quite a different one, and quite a logical one, that the bone did not move apart, but that the bone had been stretched. Against that theory is the fact that those dark lines appear to be the borders of the bone themselves. If Dr. Dewey, in addition to these radiographs, both before and after death, can show from microscopic and macroscopic examination that the darker shadows were reflected from dense bone, and not from tissues that lie above, I would much more readily accept his deduction.

Dr. C. H. Hawley, Washington, D. C.

I do not know that I can add anything to Dr. Dewey's presentation, but I can say that in the last year I have not made any X-rays, nor have I gone any further in an attempt to find absolutely what

occurs when the suture is opened; but I have found some cases in my practice where I thought it would be a great advantage to do that operation. I think what Dr. Ottolengui just said is true. When I came to think over those cases (there was something like fifteen to twenty of them), I do not know, that in the majority of them I really gained anything more than I would have done if I moved the teeth slowly. But in some I did. Let me mention one of the first cases. You remember the child, seven years of age, in whose case there was a lingual occlusion of the molars on one side. The case was treated in three weeks. retention has been good and the teeth have developed normally since that time, and I relieved this child from the nasal stenosis quickly. Within two weeks, the contour of the face was changed, the child was very much better, and the result is permanent and more satisfactory than if I had resorted to slow treatment. The child will have to be treated again when it is older, as there will be a certain amount of malposition of the individual teeth. Then there is a case I treated, a young man eighteen years of age. I have shown X-rays of this case and the apparent opening of the suture, but I cannot say that I really



gained anything. I have had to treat that case just as long. I relieved the nasal stenosis a little more quickly I think.

Where this treatment is advisable and would be satisfactory is in the case of a child, seven or eight years of age, where there is lingual occlu sion of the upper teeth and you do not wish to disturb the lower. In such a case I would produce a rapid movement and obtain a result in two or three weeks. I cannot see any harm that can possibly obtain from this, and it will save a great deal of time. As most favorable I would select lingual occlusion of the upper molars and bicuspids. If you treat a case by moving the lowers, I do not see you gain anything at all from a practical standpoint.

I recall another case I treated this year in which I used this method. This was not a case where there was a lingual occlusion of the upper teeth, but there was great overlapping of the central incisors. I opened the suture in three weeks, moved the incisors into place and held them there, and that held the expansion in the molar region; then I slowly expanded the lower. That treatment was very satisfactory. It was much easier than the regular treatment. Then I have treated one child, about seven years of age, this year with a satisfactory result. I got through with it in three weeks. It was a success. The nervous condition was relieved quickly. In carefully selected cases of that type it is a valuable method. In these cases I have not put a jackscrew into the mouth when I could get along without it.

I saw some X-rays three weeks ago that were made in the case of a child with abnormal development, where a jackscrew had been used across the mouth, then an X-ray taken. It showed absolute separation of the suture.

Dr. R. Ottolengui. The men who have advocated this movement have claimed for it advantages that are to be gained in many respects. They have not claimed there can be any advantage to a child in lessening the time of the movement of the teeth.

I consider these experiments of Dr. Dewey of vital interest; at the same time, I want to call attention to the fact that the muzzle of the dog is different from the muzzle of the child. There is considerably more of the dog's muzzle anterior to the attachment of the malar bone than in a child, and a point of great importance is the resistance of this bone. It seems to me a very different thing to spread the anterior portion of the dog's long muzzle or to spread the posterior portion of the palate or any portion of the suture in a child. It has also seemed to me that unless the movement is distal to a line drawn across the bicuspid region, we can hardly expect a great increase in the nasal space.



Another point: In one or two of his pictures Dr. Dewey showed us not only the lines which were originally the sutures spread apart, but an outline through the center which was the shadow cast by the vomer In some of the pictures where there was as much separation, there was no shadow cast by that bone. What became of the vomer? What is the exact nature of this suture? It is not simply the union of two bones. but immediately above is an attachment of the vomer itself. Suppose the palate bones are stretched apart, it does not seem to me that it necessarily follows that you can get additional space in the nasal cavity, unless you can move apart the lateral walls of the nasal cavity itself. When Dr. Hawley speaks of opening the suture I presume he means only the anterior part of the suture.

Milwaukee.

I would like to ask Dr. Hawley a question. He Dr. M. D. Federspiel, remarked that he had a case where we widened the upper arch and improved the nasal stenosis. you make an examination of the nose.

Dr. Bawley.

No.

I fear I cannot accept what has been said for the reason that I believe when we widen the upper Dr. Federspiel. arch we increase the space for the tongue to come forward, but you do not cure any of the pathologic conditions. Of course, there may not have been any.

I have no evidence in the way of measurements or examination. I wish to say, however, the boy was Dr. Hawley. never able to lie down and breathe through his nose previously, yet at the end of three weeks he was able to do so. It relieved the abnormal condition, whatever it was.

Patients frequently act nervously when they take ether. This is usually due to the fact that the man-Dr. Federspiel. dible slips back and the tongue drops; when the assistant draws the tongue forward it permits the patient to breathe more freely.

In regard to opening the intermaxillary suture, time and again I have reported having injected novocain after the arch had been expanded, made an incision, retracted the periosteum in order to find out whether the suture was opened or not. I am satisfied you cannot open the palatine suture, but mechanical stimulation of the maxillary bones will permit of greater stimulation of the osteoblasts to reform bone, and thereby increase the space for the tongue to occupy a normal position.

In regard to Dr. Federspiel's injecting novocain and dissecting down to see whether the suture is Dr. Dewev. open or not, he has only proven it is closed. It does not prove that it has not been opened, and in the dog, in a week's time you have an entirely different condition from what you had in the previous week, as is shown by the X-ray. If you exert pressure on the two halves of the maxillæ a bending of the bone occurs within three or four days and an opening of the suture that will fill up with new tissue. That brings up the proposition as to whether it is bone.

Dr. White says that Oppenheim in his research work found spicules of bone running in different directions. That is brought about by mechanical stimulation, and if regulating appliances and the forces of occlusion are brought to bear in different directions the result will be that the bone will develop in different directions.

In regard to what Dr. Ottolengui says about the maxillæ of a dog being different from that of the human being, that is true, but in the dog experiments you do not get an opening in the anterior palatal region, but directly across from the canines. It does not open in front of, but between, the canines.

I put bands on the canines with a long perpendicular tube on the buccal side; then I take the expansion arch, draw the temper so that I can bend the ends at a right angle and slip right angle end into the tube.

Dr. Ottolengui. The greatest stress is across the cuspid region?

Yes. I open there first. You can use a jackscrew and open the suture, but in the course of a week or so it will be closed up, and you do not gain very much by doing it. In the meantime, if you take off the regulating appliance that bone will be resorbed again.

Going back to the proposition of what constitutes bone, I will say that bone is simply calcified connective tissue arranged around nutrient canals. The bone you get in between the suture is compact bone, or sub-periosteal bone and is a transitory structure. It does not exist very long because it is too thick; not enough nutrition enters the canals and it is changed to the Haversian system or cancellous bone.

Dr. Young. You made the statement that when you separated these bones the new bone changed in a short time, in a week or ten days, and if pressure was removed the bone would be resorbed again.

Dr. Dewey. Yes, sir.

How long, in your judgment, is it necessary to keep the two lateral halves apart to make sure that the bone would not reabsorb in the cases that come back?



You would have to keep pressure on the halves during the lifetime of the animal. By that I mean Dr. Dewev. this bone developed as the result of mechanical force and you must keep some kind of mechanical force there to maintain it. If you put on an appliance you make that bone develop as a result of the mechanical appliance, and unless the forces of occlusion are the same as the forces of the mechanical appliance the bone will be resorbed because you have taken away one force and another has not been brought to bear on it. You can hold the teeth until you break that appliance off, but if the force of occlusion is not the same as the regulating appliance, the teeth will move as the result of the mechanical force. Bone is a constantly changing tissue. The skeleton of to-day is not the skeleton we will have next year at this time. There is no such thing as permanency in bone. Take a section of bone anywhere from the animal skeleton and you will find evidence of resorption and rebuilding as the result of mechanical stimulation brought to bear on it. The lacuna or bone cell does not belong to any "labor union." In such instances, unless he is rescued by osteoclasts he is a dead cell, and undergoes necrosis. bone in the dried specimen is the inorganic portion of it; the organic portion is the lacuna, so that as a result of that I am prepared to make the statement that the final solution in retention is the final solution in the adjustment of the forces of occlusion to hold the teeth in that position, and keep the bone developing all the time.

Would you attribute that to forms of malocclubr. Federspiel. sion? Would it depend upon malocclusion?

Retention in all cases of malocclusion depends uopn the forces of occlusion.

Dr. Federspiel. Regardless of what the etiological factor may be?

Yes; all etiological factors of malocclusion act, because they destroy some one or more of the forces of occlusion.

In the bodily movement of teeth do you move **Dr. W. E. Grisamore.** the tooth beyond the alveolar process?

I never have. I have moved the canine teeth in dogs so that in opening the suture I have moved the alveolus, although necrosis has not been the result because the canine is moving with the alveolus.

Items of Interest

Dr. Grisamore.

Did you ever move the cuspid so that the apex of the root came through?

Dr. Dewev.

No. I do not believe you can do it unless you have a pathologic condition around the teeth.

Dr. Ottolengui. I have seen a case where the anterior roots had been moved by an appliance until four of the roots were sufficiently prominent to put the finger on the apices and feel them and they were covered with bone and soft tissue.

Dr. Case.

When the force of an appliance is stopped, the tooth stops moving, does it not?

Dr. Dewey.

The teeth may move as a result of natural force.

Dr. Case.

You said the forces started the cells working the minute they stopped moving.

Dr. Dewey.

Cell activity produced by the mechanical appliance stopped and the natural forces of occlusion then produces a cell activity.





Che Dental Aspect of Oral Infection.

By M. L. Rhein, M.D., D.D.S., New York, N. Y.

Lecturer on Dental Pathology, Department of Dentistry, University of Pennsylvania.

Read before the New York Academy of Medicine, February 5, 1914.

The study of the anatomy, physiology and pathology of every part of the human body, with the exception of the dental organs, is a part of the medical curriculum. These organs consist of the teeth, their lining membrane the pericementum, the alveolar structure and the gums. They guard the vestibule of the digestive tract and their normal use is an important phase of the first scene in food digestion and assimilation. They are at different times surrounded by many pathogenic microorganisms, and any deviation from a physiologic status must surely tend to interfere with normal digestion and food assimilation. Notwithstanding the important rôle which these organs play in health conservation, the young physician starts into practice without having received any proper instruction concerning them either in health or in disease. Consequently, without proper post-graduate study it is impossible for him to appreciate the difference between good and bad dental therapy.

I bring to the Fellows of the New York Academy of Medicine a plea for recognition of a specialty whose highest aim is to preserve the health and integrity of the portal of the digestive tract.

Bacteriology during its relentless conquest of empirical medicine has shown the mouth to be the most prominent propagating point for almost every kind of micro-organism. The knowledge already obtained of the etiologic relation of the dental organs to infectious diseases must surely bring the entire medical profession to a realization of the fact that their duty to the public health demands that they should obtain such knowledge, that they will at least be able to judge as correctly the merits of the dental services rendered to their patients as of services rendered through any other specialty.

The dental organs, like the hair and nails, can be classed as end organs, and consequently are very impressionable to any nutritional impairment. The alveolar portion of the jaws consists of a buccal and lingual plate of bone between which are masses of bone divided into crypt-like cells filled in with a mixture of fibrous embryonal and degenerative remnants of epithelial structure. The roots of the teeth are imbedded in this structure and united to it by tendons and a membrane known as the pericementum, or the peridental membrane, which in turn unites with the periosteum. Blood vessels and nerve fibers pass through foramina at the ends of the roots and lead through the root canals to the pulp chamber which is filled with a jellylike mass of embryonal tissue. The gums are especially marked by their great vascularity. This tissue is ramified by a vast network of anastomosing capillaries and is a covering to the alveolar structure.

Sepsis About the Ceeth.

Septic conditions of the dental organs can be divided into three classes. First, where there is a free purulent discharge into the mouth. This may come from a sinus which has burrowed through the

alveolar plate and through which is discharging an alveolar abscess eminating from a putrescent pulp. Or there may be a discharge of pus from pockets alongside of the roots of the teeth without having any connection with the pulp of the tooth. This condition is generally known as pyorrhea alveolaris. The etiology of this latter lesion is very varied. In all forms of malnutrition this pathologic state may become a very marked symptom, depending largely on how much the resistance of the individual has become impaired.

Realizing that we are dealing with end tissue it is not surprising that the first symptoms of any form of malnutrition should be manifested around the gums with its vast network of anastomosing capillaries. "It is not unreasonable to suppose that the chemical change that takes place in the blood under such circumstances varies according to the organ involved and the nature of the malady. This accounts for the great difference in the clinical picture of the gums in different forms of pyorrhea alveolaris."* A minute study of the different pictures to be

^{*}Rhein, M.L., New York, Dental Cosmos, November, 1912.



seen in the mouth in different types of disease will not only be found an invaluable aid in differential diagnosis but frequently can be utilized as the means of making a positive diagnosis of some grave disease long before any other symptom manifests.

There is another type of pyorrhea much more frequently met which is due to trauma and localized irritation. The destruction of the first line of defense in such cases is mostly produced by improper dental



Fig. 1.

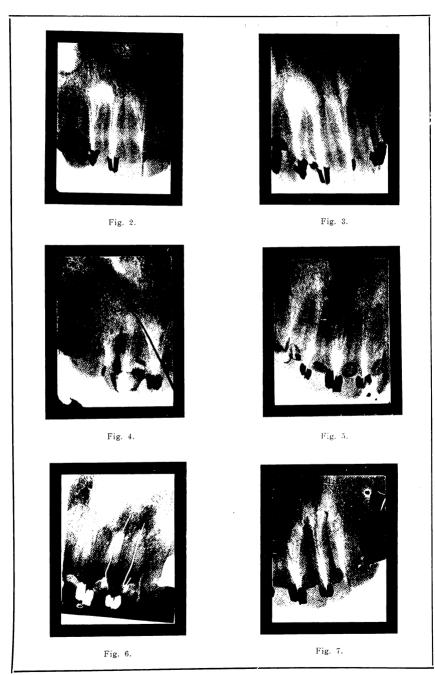
operations. Another cause is found in the impeded eruption of third molars.

Purulent exudations in the mouth also come from impaired tonsils and from the pharynx. Exfoliating pieces of necrotic bone or roots are also frequent etiologic agents.

Systemic Infection from Oral Sepsis.

The effect upon the rest of the body of the constant swallowing of purulent matter has been the subject of much discussion. Science has to-day practically eliminated the idea that the gastric juice is a barrier to the passage of bacteria and pus from

the stomach into the intestines. "Undoubtedly most of the swallowed bacteria are destroyed, not by any of the digestive secretions, but by competition with the normal intestinal bacterial flora which has preempted the ground when the nutriment is after all limited in quantity. When, however, instead of merely swallowing the ordinary bacteria mixed with the food, the individual is constantly swallowing certain amounts of pus, an entirely different problem presents. The nature, virility, and number of the micro-organisms must have a strong influence





as to their ability to overcome the surface immunity of the digestive tract. Many forms of diseases of the stomach and intestines are possible. By means of their development in the digestive tract such bacteria are very easily absorbed in the circulation and pass into the lymph spaces. After this fortress of the body has succumbed, the bacteria with their poisonous products appear to be irresistibly drawn to the most vulnerable of the vital organs. Medical literature is replete with cita-



Fig. 8.

tions of numerous forms of disease due to pyogenic bacteria which are traced to this one source."*

Pericemental those cases where pericemental abscesses, are those cases where pericemental tissue becomes infected from some form of pyogenic bacteria. In these the vitality of the pulps of the teeth remains intact. While they are supposed to be rarely met, it is more probable that the attending dentist has failed to make a correct diagnosis of the diseased area. This infection is much more common than is appreciated at the present time. The most rational theory of its etiology is that enamel germs of the teeth have left sufficient epithelial cells in this membrane to become an attractive nutriment for pyogenic bacteria. After some time infiltration causes the establishment of a sinus, reaching

^{*}Rhein, M.L., New York, Dental Cosmos, November, 1912.

Ttems of Interest

generally to the neck of the tooth, and in this state is only too frequently diagnosed as an ordinary pyorrheal pocket. The treatment of pericemental abscesses is very poorly understood at present. Its differential significance must, however, not be overlooked.

I have reserved for the third class the most important type of mouth infection, the non-fistulous granuloma or blind abscess attached to the end of a root and which grows in size at the expense of the osseous structure of

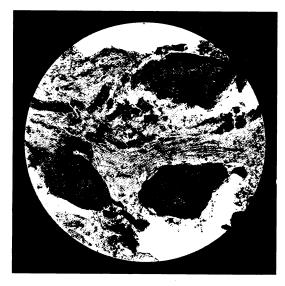
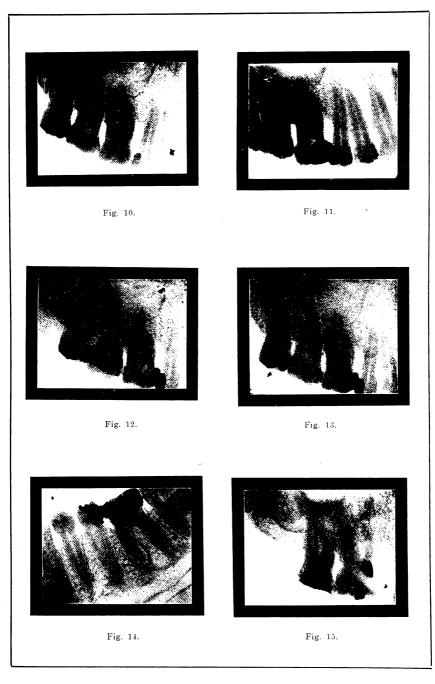


Fig. 9.

the alveolus. The importance of these cases rests on the fact that there is no mouth outlet for the purulent matter, which is, therefore, confined to a small area in the alveolus. Nature attempts to limit the size of a granuloma by means of a thick fibrous envelope, which defends the adjacent tissue as much as possible from infiltration. Notwithstanding this defense, a gradual absorption of the bacteria or their toxins is going on continuously. "The pathogenic bacteria escape from the local foci of infection by penetrating into the surrounding pervious lymph spaces and capillary vessels, into which they push, through continuous growth, or are carried by their own motility or by motile phagocytes."* The crypt-like cells of the alveolus make the infiltration of these products very easy when once they have passed through the envelope of the granuloma.

^{*}Rhein, M.L., New York, DENTAL COSMOS, November, 1912.





445 June

Dangers from Blind Abscesses. The small amount of inflammation and the quiescence of these abscesses is most likely due to the low type of virility of the bacteria present. Patients may have a number of such abscesses without experiencing the slightest symptom of discomfort in

the infected region. It is to be regretted that there is not sufficient time to detail clinical records of these cases, but it is worthy of note that on bacteriologic examination the majority of cases show the presence of streptococcus viridans. That the attack of this low type of organim is especially directed against the heart is well understood. If these observations are correct, the insidious nature of these abscesses and the grave danger of producing one of the types of endocarditis cannot be minimized. Blind abscesses have been known to remain quiescent for many years and then suddenly develop so great an activity as to readily change into the ordinary type of alveolar abscess with a sinus opening into the mouth.

Rosenow's recent demonstration of the possibility of changing under certain conditions, one type of streptococcus for that of another, would readily account for a blind abscess suddenly changing from a quiescent character into one of great activity.

These abscesses must be differentiated from the dental cyst found in this region and which are found devoid of the presence of any pyogenic organism.

The X-rays have disclosed the fact that these infections are exceedingly common. The infection of any portion of dead pulp tissue is the immediate exciting cause. It may occur in the tooth where caries is followed eventually by death of the pulp. Inflammatory action and subsequent death of the pulp under the most skilful of dental operations is always a possibility. A traumatic condition producing a rupture or strangulation of the pulp where it enters the root canal is not infrequent. The most prolific source of blind abscess comes from imperfect dental operations involving the pulp of the tooth. Under the guise of dental aid the patient is innoculated with the toxin which left untreated must result in the gradual destruction of the heart function.

That the physician is ignorant of the large number of severe diseases arising from bad dentistry is well illustrated by the fact that so many cases of this kind are found in the mouths of physicians themselves. With our present knowledge there is no excuse for this condition, and when once understood by the mass of physicians, neglect that can be followed by such grave results, will no longer be tolerated. Scientific treatment of pulps and root canals should leave a result in which septic infection is imposible. In the small percentage of cases where this end





Fig. 16.

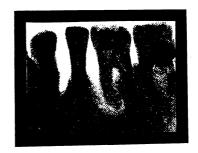


Fig. 17.



Fig. 18.



Fig. 19.

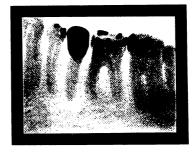


Fig. 20.

Items of Interest

cannot be attained the tooth should be extracted. The technique of such work requires a very delicate procedure and necessarily great skill, and frequently the expenditure of hours of labor.

Canal Creatment.

The pulp, for operative purposes, can be compared with the marrow of the long bone and all stages of its treatment should be carried on under the most careful aseptic surroundings. Every particle of pulp tissue must be extirpated and the canals opened to the very



Fig. 21.

Fig. 22.

ends of the roots. Only since the X-ravs have been at our disposal has it been possible for the dentist to know whether operative measures of this nature have been successfully completed. Consequently therapy in this field should invariably be accompanied by radiographic proofs. The removal of pulp tissue on account of the curved nature of so many roots, together with calcarious degeneration in so many cases, makes the operation one that frequently requires numerous hours of the most careful manipulation. Only when a fine wire can be introduced to the very ends of each root canal can there be a certainty that the root is ready for the next step in the operation, which consists in sealing the lower portion of the canal with a filling which homogeniously seals every nook and crevice in the canal and, if possible, encapsulates the end of the root. The filling material should have no properties which can possibly irritate the tissues in the apical region. The ends should, however, not be sealed while any infected area of the alveolus is present. All such pathogenic tissue must be removed. This can be done either by a surgical curettage or by electrolytic therapy.

As long as the root itself has not become necrotic, the application of zinc electrolysis will clean out the infected zone. The radiograph



has shown so many cases of restored alveolus after this treatment that its efficacy as a radical cure for such necrotic areas appears to be thoroughly proven.

After the end of the root has been hermetically sealed and the canal filled, the pulpal end is covered with an antiseptic cement, of which oxychloride of zinc cement is a good example.

The faulty root canal work, done by the most skilful operator, without the aid of the radiograph has made this aid an absolute necessity from the commencement to the completion of these operations. By means of this view of the alveolus, roots whose curves make the reaching of their ends appear almost impossible, can be entered at such a point as to practically eradicate this curvature.

If the final picture should show an imperfect operation, it is imperative that the root filling be removed and replaced by one without defect.

A few lantern slides will perhaps better illustrate the value of the radiograph and some of the technique described.

This is the photograph of a very thin ground section of one-half of the mandible in which blind abscesses are seen attached to the ends of the roots of the first molar. The one attached to the distal root is the larger of the two. The infiltration of the septic substance through the crypt-like cells is well shown.

This is a radiograph illustration of a blind abscess over an upper lateral incisor.

This is a picture of the same tooth seven months later and shows the growth in size of the granuloma during this period.

This shows an abscess of an upper lateral and an upper central incisor caused by imperfect root fillings which permitted seepage through the end of the root. The pus has burrowed its way to the neck of the central, where it empties into the mouth. A probe is seen passing through the sinus to the abscess.

Fig. 5. This shows two abscessed upper incisors.

This is the second radiograph of these teeth

fig. 6. after the pulp tissue has been removed. Gold wires
have been placed in the root canals and they give
evidence by penetrating through the end of the canals that they have
been cleaned to their very ends.



This has been taken after the zinc electrolysis has been applied to the alveolar structure around the ends of the roots and the root canals hermetically sealed, showing encapsulation of the ends of the roots.

These show micro-photographs of sections of pulp tissue in which calcareous deposits have strangulated the circulation in the pulp. Normal pulp tissue is almost obliterated by this hardened calcareous abnormal structure. Especially in multi-rooted teeth this is the greatest obstacle to cleaning out the canals to their very ends. The persistent application of sodium and potassium will accomplish the desired result.

This shows an upper molar, where, on account of such calcific matter, the dentist failed to penetrate beyond the entrance to the three canals. Infected areas are noticeable at the ends of the roots.

This shows the same root after the old filling fig. 11. has been removed and by means of instrumentation and the use of sodium and potassium the lingual root has been entirely explored, the disto-buccal almost entirely, but the mesio-buccal only a short distance. The picture demonstrates, that, on account of the curvature of the mesial root, it is necessary for the operator to remove sufficient tooth structure to permit the wire shown here to enter the canal as nearly as possible at the mesio-buccal angle and so, for operative purposes, obliterate the curvature of this root, converting it into a comparatively straight root canal.

This shows the gold wires in all the canals after the next operation and after the entrance to the mesial canal has been brought much nearer to the approximal side of the tooth.

This shows the tooth at the completion of the root fillings.

This shows good root fillings completed in a lower molar.

This shows good root fillings completed in an upper molar.

This shows a series of alveolar abscesses of lower front teeth with their sinuses opening at the necks of the teeth.

This case was, for years, erroneously diagnosed and treated as pyorrhea alveolaris. Such erroneous diagnosis is being constantly made by self-styled pyorrhea specialists.

Society Papers

This shows a case of pericemental abscess surrounding the lower half of the mesial root. The vitality of the pulp had not been impaired.

This shows blind abscesses imprisoned under roots used in bridgework. There was no external evidence of inflammation nor any discomfort noticed

by the patient.

Fig. 18.

This shows one of the very common types of blind abscess when the pulp has died as the result of placing a gold shell crown over the root of the tooth. In such cases there generally is no discomfort.

This is a radiograph taken a few months ago, showing a similar gold shell crown over a lower bicuspid with a well marked granuloma at the end of the root. The tooth was subsequently extracted under the direction of Dr. Henry James, who will describe the results of this particular case of infection. Cultures made by him from this granuloma produced the streptococcus viridans.

This is a radiograph taken two years after fig. 21.

Show alveolar structure is seen filling in the

vacant space.

This is a radiograph taken eight years after treatment of very severe alveolar abscesses by means of zinc electrolysis. The new alveolar structure in the previously diseased area is unmistakable.

These illustrations, together with all the evidence in the matter under discussion, should cause the medical profession to halt and consider if they are doing their duty for the protection of the public health.

It is a professional neglect to further defer action. No so-called special field taught in the medical colleges by specialists can show so great an etiologic bearing on infections involving the health of the community. Hence I believe that no one should be graduated from a medical college without having received a course of instruction and having passed an examination in the principles of stomatology.

Then only will physicians, as a whole, be trained to take their proper places as judges to determine if the community is receiving the benefits of scientific dentistry, which will not only increase the comforts of the individual, but operate as a material factor in increasing the longevity of those fortunate enough to secure its services.

Cocal or Inhibitive Anesthesia.

By W. J. Hogan, D.D.S., Hartford, Conn., President Hartford Dental Society.

A method of producing such numbness in different parts of the body that operations may be performed without sensation of pain to the patient has been discovered and developed by careful research, study and experimentation by Dr. Wm. H. FitzGerald, a nose and throat specialist of Hartford.

The agent he uses to procure such condition is a simple metal probe tipped with absorbent cotton. This probe is applied with different degrees of pressure to ascertain areas in either the nose, throat or pharynx, and it causes anesthesia in the afflicted part of the body. Sometimes the cotton is dipped into a dilute solution of tri-chlor-acetic acid.

Already Dr. FitzGerald has given some few clinics. At St. Francis Hospital before the hospital staff as early as November last, he gave a demonstration of his method with most satisfactory results. The physicians saw the specialist anesthetize and operate upon several patients within his own specialty, even going so far as to puncture an ear drum, a most delicate and painful operation, and the patients felt no pain. Other operations were performed by the hospital physicians after Dr. FitzGerald had anesthetized the patients; and the operations were painless and successful. The doctors were much amazed and they testified that the discovery of this local anesthesia was marvelous.

On January 18th, four dentists, including the writer, witnessed a clinic given by Dr. FitzGerald. A patient, who had several teeth to be extracted was anesthetized by him, and when she said she felt no sensation in the jaw Dr. Sears immediately extracted the teeth without pain to the patient. Another patient was brought in and when the probe was placed upon different points in the nose and throat she traced sensation to different parts of the body. The eye of another was rendered so insensitive that there was no reflex action when the probe was touched to the eyeball.

Blood was drawn with a sharp instrument from the thumb of another patient without any feeling of pain.

I have watched Dr. FitzGerald about ten or twelve times and can now anesthetize my own eye by probing a certain area in my nose so that I do not experience any sensation when the eyeball is touched. I also anesthetized the gum in the region of the lower left cuspid in my mouth so that the doctor punctured the membrane without pain to me.

Wanting to try this upon someone else, I asked Dr. Sears to allow



me to anesthetize his gum which I did by a pressure upon the lip. He felt no pain when I lanced his gum. Becoming bolder, with his permission, I anesthetized his eye so that he felt no sensation when pressure was put upon it.

On January 25th, we were with Dr. FitzGerald again, and after watching him for some time I became more enthusiastic and again anesthetized my own mouth. Dr. McLean punctured the mucous membrane in three places as far as the alveolar process and I felt no pain whatever.

On January 26th, at a special meeting of the Hartford Dental Society, Dr. FitzGerald was present and gave a few demonstrations of his method.

One of the dentists present complained of a headache, and at Dr. FitzGerald's request I cured the headache by applying pressure along the gum as far up as could be reached. The same dentist's lip was anesthetized so that it was punctured painlessly.

With only the aid of Dr. FitzGerald's method a six-year molar was extracted from a woman's jaw, while she felt no pain. The ear lobe of another woman was so anesthetized, and a tiny instrument was pushed through it.

There were present at this meeting about thirty-five dentists and two physicians, all of whom were interested and enthusiastic, and Dr. FitzGerald was warmly thanked. One very conservative dentist of ripe age, whose name would give great weight to any opinion, said he was glad to have lived to see such a wonderful discovery.

Dr. Edwin Bowers, a well-known magazine writer, spent several days in Hartford watching Dr. FitzGerald and wrote a lengthy article upon his observations.

The article appeared in the magazine section of the New York World, dated December 28, 1913.

Cooth Brush Drill.

At the annual dinner of the Lecture Staff and Mouth Hygiene Committee of the Second District Dental Society, recently held at the Hotel Clarendon in Brooklyn, Dr. Albert H. Stevenson introduced a genuine surprise by having an exhibition of the "tooth brush drill."

It has long been desirable to have a tooth brush drill so formulated that it could be taught to large numbers of children at one time. Dr. Stevenson seems to have accomplished this. At the dinner he brought in ten boys, members of one of the Boy Scout camps. They had only received one lesson in the drill and yet they went through it accurately,

thus demonstrating its practicability. Dr. Stevenson also reported that the drill has been tried out in schools and found to be practical. The children enjoy it, and this novel form of instruction impresses upon their minds this method of cleaning in such a way that they adopt it as a habit. The method of using the tooth brush is that advocated by Dr. A. C. Fones.

Cooth Brush Drill.

The following is the formula for the drill: Attention:

(All in line, elbows close to side, with brushes in right hands and cups in left.)

- 1. Ready—Dip.
- 2. Outside Surfaces. (Brush inserted under cheek and teeth closed. Motion, circular including upper and lower teeth and gums.)

3. Inside Surfaces. (Mouth wide open, straight motion, front to back.)

4. Chewing Surfaces. (Scrubbing vigorously.)

- 5. Rinse Brush (shaking off excess water on edge of cup.)
- N. B. Counting by leader should be rather brisk, but even and allowing plenty of time for dipping and shaking of the brushes.

MATERIALS:

- 1. Tooth Brushes—not too large for children's mouths.
- 2. Individual Cups (paper preferably) to be half filled with water by monitor.
- 3. One or two large pitches of water, each in charge of a monitor who half fills the cups.



Che Miller Memorial.

To the Dentists of America.

Gentlemen: The committee appointed by the Ohio State Dental Society at the 1909 meeting, for the purpose of raising funds for an American memorial to the late Dr. W. D. Miller, desire to make the following report:

Funds have been received from the following States: Alabama, \$25.00; Arizona, \$25.00; Arkansas, \$50.00; California, \$60.00; Colorado, \$82.00; Connecticut, \$50.00; Georgia, \$60.00; Illinois, \$531.00; Iowa, \$200.00; Indiana, \$75.00; Kansas, \$134.50; Kentucky, \$105.00; Maine, \$25.00; Massachusetts, \$100.00; Michigan, \$300.00; Minnesota, \$100.00; Missouri, \$100.00; Montana, \$15.00; Nebraska, \$100.00; New Hampshire, \$25.00; New Mexico, \$25.00; New York, \$125.00; Ohio, \$1,303.00; South Carolina, \$25.00; North Dakota, \$50.00; South Dakota, \$15.00; Oklahoma, \$31.00; Oregon, \$50.00; Pennsylvania, \$20.00; Tennessee, \$50.00; Texas, \$50.00; Utah, \$14.00; Vermont, \$20.00; Virginia. \$50.00; West Virginia, \$25.00; Washington, \$50.00; Wisconsin, \$25.00; Wyoming, \$10.00. Total, \$4,300.50; interest on this fund to December 1, 1913, amounts to \$382.94, making a total in the hands of the treasurer, Dr. Weston A. Price, \$4,683.44. Florida and Mississippi have each voted \$50.00, but the amounts are not in the treasurer's hands at this date.

The memorial will consist of an eight-foot bronze statue of Dr. Miller, mounted on a seven-foot granite pedestal and will be placed in the lawn of the Public Library, the most appropriate site in the City of Columbus, the capitol of Dr. Miller's native State. Suitable tablets will be prepared and it is the desire of the committee to state on one that the monument is erected by funds from every State in the Union. If your State is not represented in the above list, we want your co-operation in placing it there.

It is hoped that sufficient funds (\$5,500.00) will be in the treasury that steps can be taken at once toward the construction of this memorial, that it may be finished and ready for unveiling at the 1915 meeting which will be the fiftieth anniversary of the Ohio State Society. The valuable co-operation of the honorary committees in the several States is hereby acknowledged; they have made this memorial a reality.

Other professions have done honor to their distinguished dead, let us do the same for Dr. Miller, whose life was one of unselfish devotion to the scientific advancement of dentistry.

Yours very truly,

EDWARD C. MILLS, Chairman,

J. R. Callahan,

S. D. Ruggles,

Committee.

Columbus, Ohio, April 7, 1914.

Mouth Hygiene Circular

Appended is a copy of the circular notice sent to parents or guardians of children who had secured dental inspection:

Detroit Board of Realth.

To Parents and Guardians:

Diseases of the teeth have been named "The disease of the people."

The widespread existence of this disease and the great injury it does to the health of the child makes it one of the greatest factors in deciding the child's future.

The cure of the disease calls for the strong, united action of all persons having the care of children.

GOOD HEALTH DEPENDS ON GOOD TEETH BECAUSE

- There cannot health without nourishment.
- 2. There cannot be nourishment unless the teeth break up (chew) the food so that the body can digest the food.
- 3. There cannot be good digestion unless the teeth are able to break the food, and bad teeth cannot do good work.
- 4. If there is not good digestion there cannot be good health. Medical investigations show that much of the disease of the teeth can be PREVENTED; also that the younger the child when the teeth are cared for the greater the benefit.

All this means that if the first or temporary set of teeth could be kept free from disease, the second or permanent set of teeth would be practically sound.

Children enter school life just before or during the most important dental period; namely, the cutting of the first molar tooth. This is the first permanent tooth.

This first tooth of the second set will not be healthy and sound if the first set of teeth is decayed or neglected. The other teeth of the second set will not be healthy if this first molar is decayed.

The one great cause in all decay of teeth is THE FAILURE TO KEEP THEM CLEAN.

There was a time when the wheat used for flour was not so finely powdered as it is to-day, and when modern inventions had not robbed bread of a coarseness that made the teeth clean and strong by chewing. The finely powdered wheat flour bread clings to the teeth and sets up fermentation. This causes decay of the teeth. This decay goes on faster during the night than during the day.

Teeth: HOULD be cleaned after each meal, but MUST be cleaned before going to bed each night if decay is to be prevented.

Teeth can be cleaned by BRUSHING or by passing silk floss between the teeth.



Many children neglect to do this; then it becomes necessary to have the teeth cleaned and repaired by a dentist.

The Board of Health has gone over the whole problem of the care of children's teeth, and has prepared a plan which, it believes, will aid the children greatly in promoting good health.

The task is a big one and requires the co-operation of parents and teachers if the best results are to be gained.

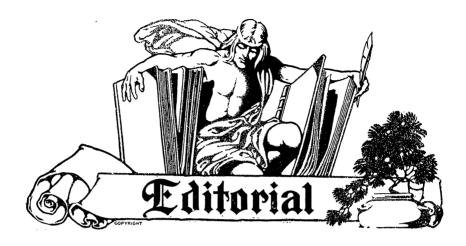
Each parent or guardian is asked to assist in this work which means so much for the future of the children.

- 1. You are asked to buy a tooth brush for each child in the family.
- 2. You are asked to see that the childuses this tooth brush daily, especially before going to bed at night.
- 3. You are requested to take your child to your family dentist for examination and for treatment. If circumstances do not permit consulting a dentist at his office, the child may be treated free at one of the following dental clinics. You are asked to do this now.

 Detroit Board of Health 222 Antoine Street O. A.M. Daily

Detroit board of Health, 233 Antoine Street A.M. Daily
Bishop School, Adelaide and Rivard Streets A.M. Saturday
Newberry School, 20th near Jackson A.M. Saturday
St. Albertus School, 839 St. Aubin Avenue A.M. Saturday
Grace Hospital, John R. and Willis Avenue A.M. Saturday
Date
Dear
You are hereby notified that the dental examination made of
under the direction of the Detroit Board
of Health shows necessity of treatment for
•
••••••
, Principal
School

Please consult your dentist.



Diagnosis with the Hid of the X-ray.

In the *Dental Review* for April, we find an editorial entitled "The Fallibility of the X-ray," which caption is unfortunately phrased. The statements made in this editorial would not call for comment, but for the fact that the writer, Dr. C. N. Johnson is one of our most prominent practitioners, and one who has a tremendous number of admirers and followers. We are of the opinion that were Dr. Johnson rewriting this title he might have it read "The Fallibility of Diagnoses made with the Aid of the X-ray."

Dr. Johnson makes two statements which may be profitably discussed. As an evidence of the fallibility of the X-ray he cites a case in the following language.

"A patient had pain in the region of the left upper cuspid. This tooth was banded as the middle pier to a bridge. A radiograph was made of the region, and the verdict of the radiographer, who was an experienced operator, was that there was an extensive abscess cavity around the cuspid with the bone all absorbed. His remark was: 'If you cut the band the cuspid will drop out. Nothing holds it in place but the gold band.'

"The band was cut and the cuspid was found perfectly firm—the thing that nearly dropped out was the bridge, the cuspid having been its chief support. Thinking from the evidence of the radiograph that there must at least be an abscess on the cuspid it was drilled into—only to find a live pulp. Here, with the best intentions, a wrong was done the patient on the evidence of the X-ray, and it is probably not an isolated case."



Limitations of Radiographs.

The writer would much like to see this radiograph, because it would be instructive to examine the evidence upon which this radiographer, who was an "experienced operator," made the reported diagnosis.

It has been said that the radiograph is but "a record of varying densities." This in a sense is true, but it is not scientifically accurate. It would be more correct to say that the radiograph is "a record of variations in resistance to the ray." To make this more intelligible, a gold or brass wire placed in a root canal will cast a deeper shadow than will a steel wire. Lead will cast a shadow deeper than any of these, yet lead is less dense.

One who essays to interpret radiographs must be a judge of shadow values and his diagnosis will be worthless unless he also have such experience and knowledge of the conditions which might produce the shadows, that he may safely attribute them to their true causes. example, a blind abscess at the apex of a tooth root will cause a dark shadow upon the film. Why? Because a part of the alveolar bone having been destroyed, the resistance to the ray is lessened, so that the film is more easily affected. But it is not sound diagnosis to declare that every shadow shown by a film at the apex of a root, demonstrates the presence of a blind abscess. Other factors must be considered. If the root is seen to be but partly filled, the diagnosis of blind abscess would probably be correct. If, however, the canal were seen to be well filled to the apex, a doubt would be raised. The good root filling might have been placed with inadequate precautions to cure the abscess, which may have persisted; or, the dentist might have entered through a fistulous track, and burred away the abscess and bone, and this bone may not have been replaced between the time of treatment and the moment of making the radiograph. Briefly, the shadow shown in a film at the apex of a tooth, merely indicates a lessened resistance to the ray in that region. Just what physical factors are the cause of this lessened resistance must be decided by other evidences present in the film, coupled with the clinical history of the case.

The diagnosis in the case cited by Dr. Johnson, should have created a doubt at once, since it would not be possible by any radiograph to determine that an abscess around a tooth was so extensive that the tooth

459 June

Ttems of Interest

would "drop out." It is well known that teeth may be quite firmly held in place by soft tissue alone, and without bony support. Moreover, the ray can only record conditions approximally of a tooth, while the attachment at the buccal, labial or lingual surfaces cannot be detected. Pyorrhea pockets are frequently seen along the approximal sides of roots which still may have healthy attachment with their sockets elsewhere.

The radiographer, in Dr. Johnson's case, read too much out of his radiograph. The fallibility was his and not to be attributed to the X-ray.

Radiographs of Root Fillings.

The other statement by Dr. Johnson, on which we would comment, reads as follows: "It does not prove that a root canal is not well filled because the radiograph fails to show a filling to the apex?"

Just what does Dr. Johnson mean by that? A root canal may be well filled with paraffin, perhaps, and the radiograph not shown any root filling. Yet a really good radiograph, read by a really good diagnostician, would show such a false shadow in the region of the canal that he would say: "That canal is either not filled, or else it is filled with some substance penetrable by the ray." Or, a radiograph might show a resistant filling not quite to the end, with the rest of the canal undiscernible. Dr. Johnson might call this well filled because the operator has done the best that could be done, since calcarious material rendered it impossible to penetrate further. But the expert radiographer would not say, "That is a bad root filling!" He would say, "The canal is not filled to the end"; and if there were also a shadow at the apex he would add, "If the canal cannot be cleaned out and filled to the end, the root should be amputated, since there is an abscess present." But if beyond the termination of the shadow of the root filling, the canal is distinctly outlined, the radiographer may unhesitatingly declare: "Bad root filling."

Two instances from practice will show how one gains experience in the matter of making diagnoses with the aid of the X-ray. Very shortly after the writer had begun to use the X-ray in his own office a young boy presented with two central incisors, which had been broken by a fall, the pulps dying. A radiograph showed what appeared to be very poor root fillings. His guess was that the previous dentist had used chloropercha freely, and a cone that was too small, and that the shrinkage of the chloropercha had resulted in the seemingly zig-zag root filling. An



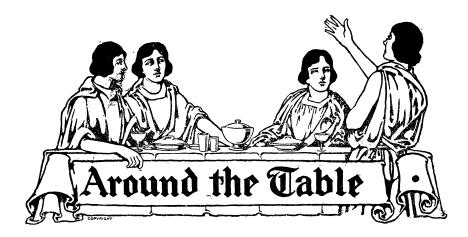
ingenious guess that proved to be erroneous. The canals were found filled with cotton on which had been placed an iodol paste. Investigation showed that this had only been meant to serve a temporary purpose, and the patient had never returned to the dentist.

With this experience in mind, the writer upon studying a radiograph recently, in conjunction with the clinical history of the case, made the guess that the canals were, to some extent, filled with some sort of mummifying paste, and upon opening the tooth the "root fillings" were easily picked out of the canals, and the nostrils readily detected the odor of iodoform.

Thus my very respected confrère should have attributed the fallibility to the radiographer, rather than to the ray, and in this connection we might say it is almost as hazardous to accept in a dental case, a radiographic diagnosis made by a medical radiographer, as it would be to accept in a medical case a diagnosis made by a dental radiographer. Indeed the safest method is for the dentist to be his own radiographer, as very often the angle at which the ray is used may alter the reading of a radiograph.



June



"THERE ARE ALWAYS two sides to everything," says the Proverb, or the

- * Epigram, or the Axiom, or whatever the wise phrase is, except when
- * there are three sides, or four, or more; or in case the thing is a ball, and
- even then there are two sides if we view it in the right light; because
- ❖ if you place your ball where the sun will shine on it, it will cast a
- shadow; then there will be the sunny side and the shadow side.

83 83 8

SO, OF COURSE, AS this little world of ours is round, and therefore a

- ♦ ball of a kind, it has its sunny side and its shadow side. That is not
- * remarkable, but what is more than remarkable is that so many of the
- Earth's inhabitants should seem to prefer to live in the shadow and
- som, rather than to come out into the light and sunshine.

85 8

THUS A NUMBER of folks may live in the same locality, but the locality

- * never comes to be a neighborhood. And these folks may get to recog-
- nize the names of the local residents, especially the dental names, which,
- . of course, stare at you from the window signs, but they never recog-
- ❖ nize that being in the same neighborhood they should be neighbors,
- and even neighborly.

808 808 808

OFTEN WHEN WRITING of another dentist we mention him as "Our

- * esteemed confrere." "Confreres" means "brothers together," and that
- * is only another way of saying "neighbors."

xa xa xa

IT HAPPENED THAT I had a neighbor once; in fact, I had him for a long

- * time; ten years. At least I knew my neighbor's name, because I re-
- * member when he moved in, and when I first saw his name on his sign.
- Perhaps he never saw mine at all. I don't know. But at the time, I
- * made inquiry and was told that he was an excellent dentist, and an
- * excellent gentleman. But though we were neighbors, we never chanced
- * to meet, and get really acquainted. And then I moved to a different
- locality.



AND NOW, TO MY surprise, he has written me a little note. When I

- * read it I did not quite grasp the meaning, so I read it over, and then I
- did understand. At first I hardly knew whether to reply or not. But
- * I did reply, and at the moment considered the incident closed, to use
- the language of diplomacy.

x x x

BUT THE MORE I have thought of my neighbor's communication, the

- * more it has been borne in upon me that a heart-to-heart, free and frank
 - ❖ little talk on the general subject may be good for us all. One trouble
 - in life is that we keep too many matters secret, when a little mutual
 - ❖ airing of views might bring us out of the shadow of suspecting the
 - * next-door-man's intentions, into the sunshine of neighborliness.

8 S

NOW, THEREFORE, THOUGH I know that many will think this a private

- * matter which should have no place in this department, I have concluded
- otherwise, and I have decided to take the risk of being misunderstood
- ❖ by some, hoping to be understood by, and possibly helpful to others.

X X

BUT FIRST I MUST give you my old neighbor's letter. Here it is, as

- nearly as I can recall it. "Dear Editor, Don't you think you could give
- * us more of 'Ottolengui' in the 'Items of Interest'? Perhaps you might,
- by leaving out the advertisements. T. R. is a back number now."

AND THEN HE signed his full name, but I am not sure that the communi-

- cation was meant for publication, so will omit it. That is not the point
- * anyway. The real grist which must be ground in the mill comes to
- * this: "Is the editor of 'Items of Interest' suffering from exaggerated
- ego?" and the trouble is—but that reminds me of a story.

88 88 88

ONCE ON A TIME a foreign diplomat, resident in Washington, D. C.,

- earned the ill-will of the Correspondent of a great Metropolitan daily,
- * and said Correspondent lost no opportunity to stab said Diplomat with
- his red-inky pen till it almost seemed that he was shedding the scar-
- state let blood of the foreigner. Sometimes he said that the Diplomat had
- ♦ been "Sent from his Country for his Country's good." This is known
- * as the "stab diplomatic." Again he announced that "It is rumored that a
- certain diplomat, whose name begins with 'R' and ends with 'osini,' only
- * escaped jail at home, because the political influence of powerful friends,
- * obtained for him his diplomatic post, wherein his peculiar talents
- * might be turned to the advantage of his political faction. This rumor,
- however, has not been confirmed." This is recognized as the "attack
- * reportorial." It escapes being libelous by its technical lack of assertion.

88 88 88

THE CORRESPONDENT raved on, but the Diplomat raved not. The

- * Correspondent dubbed the Diplomat with every criminal title that could
- * be compassed in phrases reportorial though not actionable, but the
- . Diplomat refused to come out of the sunshine of conscious righteous-
- ness into the shadow of unseemly dispute. And he daily read the
- Correspondent's diatribes and smiled.



BUT CAME A DAY when the Diplomat ceased to smile. The Correspondent

- at last found the rift in his armor, thrust in his pen and turned it
- around, so to speak. In rage the Diplomat rushed to his Nearest Friend
- "See what that Scoundrel has called me now?" and said:
- Friend read, and wondered. "Why," said he, "you surprise me. Before
- this he has called you everything from a swindler to a murderer, and
- you have smiled. Why are you angry now? All he says here is that
- you are a fool?"

"EXACTLY SO," replied the Diplomat. "But, don't you see, when he tells

- his readers that I am a swindler or a murderer I tolerate his stupid
- * tales, because in my heart I know that they are false. But when he
- says that I am a fool, how am I to know whether he lies or not?"

85

AFTER THOROUGHLY DIGESTING the moral of this narrative, and it

- is a highly moral tale, let us consider my neighbor's very neighborly
- note. Why did he write it? Evidently he thought that there was too
- much "Ottolengui" in the May issue of "Items of Interest," and there
- really was quite a good deal of Ottolengui's manuscript printed therein.
- But let us analyze this a moment. No exception can be taken to the
- presence of the editorial, because custom demands that the editor should
- write editorials. This custom is not popular with editors either. If
- you doubt me ask any editor. Then there were a few pages devoted to
- this department. In the language of the Bard of East Aurora, this was *
- all "good stuff" and though the language was the editor's, the substance
- was from the pens of abler men. There was, however, a lengthy article
- entitled, "The Physiological and Pathological Resorption of Tooth
- Roots." which was read a year ago before the American Society of
- Orthodontists.

88

POSSIBLY MY NEIGHBOR did not like this, first because it was in the

- Department of Orthodontia, and secondly, because it was lengthy. I
 - cannot but wonder whether my neighbor read this article or not, and
- somehow I conclude that he did not. Had he done so he must have dis-٠
- covered that though in the department of orthodontia (because read
- before an orthodontic society whose proceedings we publish), it dealt •
- with a subject of vast importance to every practitioner, and that it *
- related an unrecorded, if not a heretofore unknown fact, viz.: that per-*
- manent teeth may lose their roots by resorption, just as do the tem-٠
- * porary teeth, without death of the pulp and without loosening of the
- teeth until they are really lost. It is of tremendous interest to ortho-
- dontists to determine whether orthodontic interference can inaugurate
- such root destruction, and it is of paramount importance that the gen-÷
- eral practitioner, who takes the responsibility of selecting an ortho-
- dontist for an innocent and helpless child, whose parents know abso-٠
- lutely nothing of the hazzards of the work, not alone should know that
- the specialist is competent, but that he should himself be able to judge
- of the progress of what the specialist may be doing or undertaking.



AND THIS WILL be a good place to pause a moment and once more de-

- clare that the Department of Orthodontia is maintained, not solely for
- the orthodontic specialists who find their practices mainly in the large
- cities, but for the information and post-graduate instruction of general
- * practitioners in localities, where there may be no exclusive orthodontic
- specialist; and also for the benefit of the general practitioner who, while
- not correcting malocclusions himself, should be in the position to super-
- vise the progress of work done for children of his patients.

SS SS S

THUS, WHILE IT MAY be true that there was a good deal of "Ottolengui"

- in our May issue, just what does my neighbor mean by his communica-
- * tion? Is it his idea that outside of the editorials, which custom compels
- him to write, the editor of a dental periodical must keep himself out
- of print? Does he mean that a dental editor should not be a member of
- state dental societies, nor read papers, nor take part in discussions? Does he
- * think that an editor who may thus efface himself will produce a better
- magazine? Or is it not just barely possible that an editor who does
- * keep in touch with society work, and who does practice dentistry, and
- * who does meet the obstacles to success which every practical man
- * must solve as they occur day by day, might perhaps, because of all this,
- * be a little better fitted to determine what to print and what to eliminate.
- . Is it egotism, or is it neighborliness that prompts an editor to work a
- * year or two on some dental problem, and then publish his findings?
- * Frankly, I cannot myself answer the question. Perhaps it is egotism
- ❖ only when the editor publishes it in his own magazine. But what is a
- fellow to do when the material belongs to a society whose transactions
- he regularly prints?

825 825 825

AND NOW, KIND CONFRERES, having admitted you, as it were, into my

- confidence, advise with me. Put yourselves in my place, if you can,
- and decide just how you would have replied to my neighbor's letter, if
- you had been an editor, and he had been your neighbor. And now let
- ❖ me tell you how I answered him. These are not the exact words, but
- the substance is the same. "Dear Doctor, I have your rather odd
 postal card, and would like to make a suggestion to you. You must
- have some individual methods which are useful to yourself, and which
- nave some marvadar memods which are useful to yourself, and which
- would be equally useful to your confreres, if you would but publish
- * descriptions of them. I should be glad to consider a manuscript
- from you. Cordially yours, etc."

X X X

PERHAPS I MAY BE wrong, but it does seem to me that there we have

- the human viewpoint. So many of us are more willing to tell another
- fellow how to do it, than we are to turn in and help him. There is
- now, and always has been, a demand for short articles. That terrible
- fellow, the "busy dentist," just can't spare time to read much over half
- * a page. Therefore he would welcome half-page articles, which tell him,
- not why a thing should be done, but the way to do it, and he wants this
- practical information in the fewest possible words. But he is not only
- so busy that he cannot read, but he seems to be so busy that he cannot
- * write either, and that is not very neighborly, is it?



WHAT IS THE editor person to do about this? He cannot print these

- nice, crisp, practical, short articles, unless somebody writes them. And
- if he does some writing himself, and tries to inspire others to write
- also, why, Presto! He has "caputis incrementum enorme," exaggerated
- ego, paranoia, or something. "Oh, well! Perhaps so. Perhaps, also.
- he is a fool for his pains. I do not know!"

823 83

RIGHT HERE SEEMS TO BE a good place for a letter from Dr. Thaddeus

- P. Hyatt, in reply to some remarks by E. J. K., which appeared in this
- Department in the April issue. Dr. Hyatt has the courage of his con-
- victions, which translated means that he is not afraid to say what he
- thinks.

"I AM READING with interest your new department in the 'Items of Inter-

- est,' and believe it is only right that someone should reply to the remarks
- of one called E. J. K. My first impression on reading these remarks was
- to recall a nursery rhyme which went somewhat as follows:
- "Baby, Baby Bunting, your father has gone a-hunting,
- ٠ To find some rabbit skins to wrap poor Baby Bunting in.

8 8

"E. J. K. SHOULD UNDERSTAND, that the so-called Old Guard of any

- and all societies is recruited from the ranks of those who have had
- sufficient courage to express themselves in any 'icy atmosphere,' or even
- in the heated air of Hades and thus have gained the strength and the
- ability to qualify as candidates for the company of the Old Guard. If
- E. J. K., or any of the 'little fellows,' have good ideas let them express
- them in open meetings. The Old Guard cannot kill them, even if they
- do freeze them and turn their ideas into little icicles and lay them in
- cold storage.

85

"I AM DISGUSTED at hearing these remarks made so often, for if the

- truth be told it will be found that members of the Old Guard are tired
- of having so often to get up at meetings and say something to fill in
- awkward pauses, just because these little fellows who, even though their
- ideas may be good, are themselves so weak and timid they are afraid
- of catching cold and so they say nothing. But after the meeting, by
- ٠ and among themselves hear them chatter and clatter. Says one little
- weakling, standing up so proudly, 'Say, boys, if I only had had a chance
- to speak to-night I'd have shown old Generousheart he did not know a
- thing of what he was talking about,' etc., etc.

80

"NOW, I SAY ALL THIS quite frankly and freely, for I know no one con-

- siders me a member of the Old Guard. Yet I have spoken at local and
- State meetings, and ofttimes have been laughed at, and am still alive,
- and do not feel one bit cold or even chilled. I have expressed my ideas
- at meetings knowing full well that if they were bad they would be soon
- forgotten and sooner forgiven, and if good they will live and prove of
- use and value even if at first not appreciated. Those who wait until
- they feel sure they will receive the approbation and approval of all the



- members will wait a long and lonesome wait, and I doubt if any man's
- * life is long enough to realize this happy condition. I find the rule is
- segmerally true that it is the little fellows that are most ungenerous in
- * their attitude and criticism, and this is because they are so little. It is
- the big fellows of the Old Guard who are the first to welcome and en-
- courage the young beginner in his efforts to contribute something
- toward the uplift and help of our profession.

55

"LET E. J. K. BRACE UP and jump into the ring and win his spurs. Faint

- heart ne'er won fair lady, nor will the backward and timid contributor
- to dentistry receive recognition, while he sits in the back row at meet-
- ings doing nothing but complain because he is not waited upon by the
- older members and carried to the platform and applauded for every
- ❖ word he utters. I am not ashamed of my name, nor the sentiments I
- ❖ have expressed, and you may print both, or throw the whole thing into
- * your waste paper basket, which I sincerely trust will always be full
- and overflowing."

82 82 8

I FEEL SURE that Brother Hyatt is a good neighbor.





new Eure for Pyorrhea Alveolaris.

Editor ITEMS OF INTEREST.

DEAR SIR: I wish to report a new cure for pyorrhea. At least, I have never heard of this method, although it may be old.

My first case was in my own mouth—a lower cuspid having a pocket on the lingual side extending about a third of the way down the root. I had treated it myself and had had others treat it also. But no cure. Finally, as an experiment, I took a sharp lance and cut the gum away, eliminating the pocket entirely. That was the end of the pyorrhea on that tooth. It has been well for about a year without a sign of recurrence.

A recent case—a young lady with upper lateral, lower cuspid and lateral very badly affected. The upper lateral had a pocket extending apparently to the end of the root. The lower tooth about half-way down, discharging a large amount of pus and very sore. I advised extraction as the case seemed hopeless. The patient begged me so strongly to save her teeth that I decided to try cutting away the gum tissue. After cocaining the gums, I lanced away all the gum down to sound alveolar process. Fortunately, these teeth were not affected much lingually. But the upper lateral I had to cut until the end of the root was exposed on the labial side. She also had a couple of molars and bicuspids which I treated in the same way. The only after-tretament I gave them was to disinfect them several times and remove the deposits, which, of course, could be plainly seen after the gum was cut away. The first treatment was on January 16th. At the present time, March 7th, the gum is perfectly healthy and no pus. In fact, there has been no pus since the first operation.

I conclude from these cases, that we can cure pyorrhea by eliminating the pocket, either with medicines or with the knife. The latter being quicker and certain, why not use it? These are remarkable cases to me, as under ordinary circumstances anyone would have condemned the teeth to the forceps. Have treated several other cases in the same way



with uniform success. I would be pleased to have your comments on this treatment. I am,

Respectfully,

T. B. HECKERT, D.D.S.

Wayne, Nebr., March 7, 1914.

March 14, 1914.

Dr. Thos. B. Heckert, Wayne, Nebr.

My DEAR DOCTOR:

Your recent communication in regard to "a new cure for pyorrhea" is quite interesting.

By an odd coincidence your letter reached me on Tuesday morning of this week and on Monday evening, being the night previous to the receipt of your letter, I heard a paper read by Dr. Howard Stewart on the treatment of pyorrhea. One of the methods advocated by him was the incision of the part to the apex of the root in order to facilitate thorough cleansing. This he claims to have given to the profession some years ago. This proves two things; that many minds may originate the same methods and, secondly, that it takes some time for the whole profession to be informed on any subject.

Cordially yours,

R. Ottolengui.

Dr. R. Ottolengui, New York.

My DEAR DOCTOR:

Thank you for the kind letter in regard to my treatment for pyorrhea. Dr. Stewart's method is not just the same as mine. I cut the gum away entirely and claim that this alone will cure any case of pyorrhea where there is sufficient alveolar process to retain the tooth. This method, of course, is most applicable to those cases where not much bone is lost. Incisors and cuspids are most easily operated on. Molars and bicuspids are more difficult. All the after-treatment needed is a mild antiseptic wash, and, of course, the roots should be scaled after the operation of cutting away the gums.

The loss of gum tissue might be objected to, but to my mind, it is preferable to have a healthy tooth uncovered than a diseased one covered, and I have had several remarkable cures with just the one treatment of cutting away the gum tissue.

I am not concerned about priority of discovery, but would be pleased

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if you or some of your friends would try this out and report results in your journal. I perhaps am a little too enthusiastic, but I can say that I never have felt really sure of curing a case of pyorrhea until I commenced using this method.

Fortunately, most cases of pyorrhea commence on the labial side, so that it is easy to operate, and by cutting away a little of the gum tissue we may be able to stop its progress.

Thanking you again for the interest you have shown, I am,

Fraternally,

T. B. HECKERT.





National Society Meetings.

American Institute of Dental Teachers, Ann Arbor, Mich, January 28-30, 1915.

Secretary, Dr. J. F. Biddle, 517 Arch St., N. S., Pittsburgh, Pa.

NATIONAL DENTAL ASSOCIATION, Rochester, N. Y., July 7-10, 1914. Secretary, Dr. Otto U. King, Huntington, Ind.

AMERICAN SOCIETY OF ORTHODONTISTS, Toronto, Canada, July 2-3, 1914. Secretary, Dr. Wm. Ernest Walker, 629-631 Maison Blanche, New Orleans, La.

Panama-Pacific Dental Congress, San Francisco, Cal., 1915.

Secretary, Dr. Arthur M. Flood, 240 Stockton St., San Francisco, Cal.

European Orthodontia Society, seventh annual meeting, Paris. Grand Hotel Continental, 3 Rue Castiglione, Tuesday, July 28th; Wednesday, July 29th. Clinics, Saturay, August 1st. Secretary, G. Lind, 542 Keizersgracht, Amsterdam, Holland.

State Society Meetings.

ARKANSAS STATE DENTAL ASSOCIATION, Little Rock, Ark., June 4, 5, 6, 1914.

Secretary, Dr. C. L. Hunt, Fort Smith, Ark.

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- California State Dental Association and Southern California Dental Association, Yosemite Valley, Cal., June 29-30, July 1-2, 1914.
 - Secretary, Dr. E. E. Evans, Union Savings Bank Bldg., Oakland, Cal.
- COLORADO STATE DENTAL SOCIETY, Manitou, Colo., June 25, 26, 27, 1914.
- FLORIDA STATE DENTAL SOCIETY, Atlantic Beach, Fla., July 1-2-3, 1914. Secretary, Dr. Alice P. Butler, Gainesville, Fla.
- GEORGIA STATE DENTAL SOCIETY, Atlanta, Ga., June 4-6, 1914. Secretary, Dr. M. M. Forbes, Candler Bldg., Atlanta, Ga.
- LOUISIANA STATE DENTAL SOCIETY, Baton Rouge, La., June 4-6, 1914. Secretary, Dr. E. B. Ducasse, Maison Blanche, New Orleans, La.
- Maine Dental Society, Augusta, Me., June 25-27, 1914. Secretary, Dr. I. E. Pendleton, Lewiston, Me.
- Maryland State Dental Association, Baltimore, Md., June 11-12. 1914.
 - Secretary, Dr. F. F. Drew, 701 N. Howard St., Baltimore, Md.
- MINNESOTA STATE DENTAL ASSOCIATION, Duluth, Minn., August 6-8, 1914.
 - Secretary, Dr. Benjamin Sandy, Syndicate Bldg., Minneapolis, Minn.
- Mississippi Dental Association, Vicksburg, Miss., June 23-25, 1914. Secretary, Dr. M. B. Varnado, Osyka, Miss.
- Montana State Dental Society, Great Falls, Montana, June 11-12-13, 1914.
 - Secretary, Dr. F. W. Adams, 14-15 Chicago Block, Billings, Montana.
- NEW HAMPSHIRE STATE DENTAL SOCIETY, Weirs, N. H., June 17-19, 1914.
 - Secretary, Dr. Louis I. Moulton, Concord, N. H.
- New Jersey State Dental Society, Ocean Grove, N. J., July 15-18, 1914. Secretary, Dr. John C. Forsyth, 430 E. State St., Trenton, N. J.
- NORTH CAROLINA DENTAL SOCIETY, Hendersonville, N. C., June 24-27. 1914.
 - Secretary, Dr. J. Martin Fleming, Raleigh, N. C.
- OHIO STATE DENTAL SOCIETY, Columbus, O., December 1-3, 1914. Secretary, Dr. F. R. Chapman, 305 Schultz Bldg., Columbus, O.



PENNSYLVANIA STATE DENTAL SOCIETY, Phila., Pa., June 30, July 1-2, 1914.

Secretary, Dr. Luther M. Weaver, Phila., Pa.

Tennessee State Dental Association, Chattanooga, Tenn., June 25-26-27, 1914.

Secretary, Dr. C. O. Rhea, 6251/2 Church St., Nashville, Tenn.

UTAH STATE DENTAL SOCIETY, Logan, Utah, June 19-20, 1914.

Secretary, Dr. I. P. Stewart, 1st Nat. Bank Bldg., Logan, Utah.

VIRGINIA STATE DENTAL ASSOCIATION, Old Point Comfort, Va., July 1-3, 1914.

Secretary, Dr. C. B. Gifford, Norfolk, Va.

WEST VIRGINIA STATE DENTAL SOCIETY, Huntington, W. Va., August 12-14, 1914.

Secretary, Dr. A. C. Plant, 802 Schmulbach Bldg., Wheeling, W. Va. WISCONSIN STATE DENTAL SOCIETY, Fond-du-Lac, Wis., July 14-16, 1914.

Secretary, Dr. O. G. Krause, Wells Bldg., Milwaukee, Wis.

National Dental Association.

TENTATIVE PROGRAM.

The National Dental Association will hold its 1914 meeting in . Rochester, N. Y., July 7th to 10th. The House of Delegates will hold its first session on Monday, July 6th, at 11 A. M., and it is important that all delegates be present at this time.

The first general session will open at 11 A. M. Tuesday, July 7th, and the local committee have hopes that Governor Glynn will be present to make the address of welcome. This will be responded to by Dr. B. Holly Smith, Baltimore, Md. The president's address will be followed by an address by Dr. Victor C. Vaughn, president of the American Medical Association.

The second general session will be held in Convention Hall at 8 P. M. Tuesday and will be a symposium by the Research Commission with Drs. Weston A. Price, Thomas B. Hartzell and Russell W. Bunting as speakers. At the Wednesday evening general session Dr. Joseph C. Bloodgood (M.D.), of the John Hopkins University, will discuss "The Early Recognition of Pre-cancerous Lesions of the Mouth and Tongue." At the Thursday evening general session two selected papers will be presented from Sections 1 and 111.

The program for the section meetings has not been entirely completed, and two or three papers will be added to the following list: Dr. J. R. Callahan, Cincinnati, "Some Phases of Root Canal Treatment";

Dr. W. H. DeFord, Des Moines, "Some Phases of Eliminating Pain"; Dr. E. J. Eisen, Milwaukee, "Dental Radiography"; Dr. Herbert L. Wheeler, New York City, subject to be announced; Dr. Fred W. Gethro, Chicago, subject to be announced; Dr. J. D. Patterson, Kansas City, "Pyorrhea Alveolaris"; Dr. C. H. Oakman, Detroit, "Oral Hygiene"; Dr. Chalmers J. Lyons, Ann Arbor, "The Pathological Significance of Impacted Teeth"; Dr. Dayton Dunbar Campbell, Kansas City, "Some Basic Principles and Methods in the Reproduction of Mandibular Movements"; Dr. Wm. A. Giffin, Detroit, "Technique for Making Impressions and Models for the Construction of Artificial Dentures," demonstrated with motion pictures; Dr. A. J. Bush, Columbus, "Classification of Fixed Bridgework with Law Governing its Application"; Dr. Carl B. Case, Milwaukee, "Evolution of Root Movement"; Dr. Jules J. Sarrazin, New Orleans, "Properly Constructed Bridges and their Hygienic Care"; Dr. Homer C. Brown, Columbus, "The Responsibilities of the State Society Officers"; Dr. Otto U. King, Huntington, "The Business Side of the State Society Work."

The Clinic Committee is to present a progressive clinic Wednesday morning, commencing at 9:30. They have secured a list of exceptionally high-class clinicians for both the progressive and the general clinic. The general clinic will be given Friday morning and full details of the clinical program will be presented through the *National Bulletin* and later journals.

The local committee has selected the Powers Hotel as headquarters and reservations should be made as early as possible. A full list of hotels and rates will appear in the *National Bulletin*. This committee has made ample provisions for a large meeting. All except the evening general sessions will be held at the Exposition Park under most favorable conditions. The superintendent of the park has assured us that the temperature of these buildings can be regulated so that July weather need not interfere with our comfort.

All reputable practitioners of dentistry and medicine are cordially invited to attend this meeting.

Fraternally,

Homer C. Brown, President, Columbus, Ohio.

Otto U. King, Gen. Sec'y, Huntington, Ind.



Railroad Arrangements for the National Meeting.

Delta Sigma Delta Special Crain. The annual meeting of the Delta Sigma Delta will be held in Rochester, N. Y., Monday, July 6th, being one day prior to the opening meeting of the National Dental Association. The banquet will be held the same evening. Headquarters at Hotel

Powers.

The New York Auxiliary has completed arrangements with the New York Central Lines for a Special to leave the various cities as per schedule outlined, arriving Rochester at a convenient hour July 6th (see announcement of train, below). The special train will be made up of the latest type steel Pullman cars, electric lighted throughout and will be operated to Rochester on a fast schedule. Brothers in Boston and New England may connect with this train by leaving Boston via the Boston & Albany Railroad, making an immediate connection at Albany, or take these cars from "The Hub":

"The Hub":
Sunday, July 5th: Lv. St. Louis, Mo., via Big Four Route. 11:30 A.M. "Indianapolis, Ind., via Big Four Route. 5:50 P.M. "Cincinnati, O., via Big Four Route. 6:05 P.M. "Dayton, O., via Big Four Route. 7:45 P.M. "Springfield, O., via Big Four Route. 8:30 P.M. "Columbus, O., via Big Four Route. 9:55 P.M. Ar. Rochester, N. Y., via New York Central R. R. 9:21 A.M.
SUNDAY, JULY 5TH: Lv. Chicago, via Michigan Central R. R
SUNDAY, JULY 5TH: Lv. Chicago, via Michigan Central R. R
Lv. New York, (Grand Central Terminal), via Monday Sunday New York Central R. R8:30 A.M. 9:34 P.M. 11:35 P.M. " (125th Street Station), via New York Central R. R 9:45 P.M. 11:46 P.M. Ar. Rochester, N. Y., via New York Central R. R
CONVENTION FARES TO ROCHESTER AND RETURN AND PULLMAN FROM R. R. FARE D. ROOM COMPT. Lower St. Louis, Mo. \$23.50 \$14.00 \$11.50 \$4.00 Indianapolis, Ind. 20.00 11.00 8.50 3.00 Cincinnati, O. 18.10 11.00 8.50 3.00

Convention Fares to Rochester and Return and Pullman (Continued)

D	R. R. Fare	D. Room	Сомрт.	Lower
Dayton, O	\$16.45	\$9.00	\$7.00	\$2.50
Springfield, O	15.00	9.00	7.00	2.50
Columbus, O	14.20	9.00	7.00	2.50
Chicago, Ill	21.10	11.00	8.50	3.00
Toledo, O	I3.70	7.00	6.00	2.00
Grand Rapids, Mich	16.75	11.00	8.50	3.00
Cleveland, O	10.35	7.00	6.00	2.00
New York, N. Y	14.45	7.00	6.00	2.00
Boston, Mass	16.70	9.00	7.00	2.50
Detroit, Mich	11.60			

The above fares are approximated, as exact fares are not yet available from Western points, but the above are considered nearly correct.

Members of the National Dental Association are cordially invited to join the Delta Sigma Delta Special, offering an exceptional opportunity

to fraternize on the journey.

If you expect to visit New York City after the convention, inquire of your ticket agent the thirty, sixty and ninety day round trip fares and instruct him to route the ticket via New York Central Lines from Chicago, St. Louis or Cincinnati. Such tickets permit stopover at Rochester for ten days or less by depositing with agent at Station Ticket Office immediately on arrival.

For Pullman reservations to Rochester, please address the follow-

ing, viz.:

Dr. Burton Lee Thorpe, 3605 Lindell Boulevard, St. Louis, Mo.

Dr. Wm. E. Kennedy, 316 Board Trade, Indianapolis, Ind. Dr. W. H. Whitslar, 700 Schofield Building, Cleveland, O.

Dr. J. R. Callahan, 25 Garfield Place, Cincinnati, O.

Dr. D. C. Bacon, 31 State Street, Chicago, Ill.

Dr. R. Ottolengui, 80 West Fortieth Street, New York City.

The same train service is in effect for members of The National Dental Association who may wish to leave one day later, and the New York Central Lines is the only system operating Pullman cars to and through Rochester.

Xi Psi Phi Fraternity National Alumni Association Annual Meeting.

"Good-fellowship, not Politics"

PLACE—Rochester, N. Y.

DATE—July 6th. All functions will be held on this day so as not to conflict with the sessions of the National Dental Association.

Headquarters—Hotel Seneca. Register on arrival in the Xi Psi Phi Parlor on the Mezzanine. An entire floor has been reserved for our members.



Functions—Annual dinner in the large banquet hall of the hotel at 6 P. M. Members of international respect will do the toasting. Be sure to send your acceptance without further notice to Dr. George C. Lowe, 813 Chamber of Commerce Building, Rochester, N. Y., so that reservation may be made for you. This is important so that the correct number may be provided for.

The annual business session will immediately follow the banquet. Matters of the utmost importance will come up for disposal and your

presence is, therefore, strongly urged.

MEMBERSHIP COMMITTEE—Kindly get in touch with Dr. C. C. Markey, 1436 Peoples' Gas Building, Chicago, Ill.

C. O. SIMPSON, Secretary, St. Louis, Mo.

L. M. WAUGH, President, Buffalo, N. Y.

Forsyth Dental Infirmary for Children Permanent Staff. Salary \$1000 per Year.

Examination of graduates in dentistry (of less than three years' standing), for appointments to positions on the permanent staff of this institution will be held a Boston, Mass., on June 8, 1914.

The Forsyth Dental Infirmary for Children is an institution founded by John Hamilton and Thomas Alexander Forsyth in momery of their brothers, James Bennett and George Henry Forsyth.

This institution which will have sixty-four dental chairs is expected to open in the fall of 1914. It is intended to care for the dental needs of 220,000 school children in Boston and its suburbs. The clinical department, splendidly equipped and presenting unequalled facilities for post-graduate study in dental prophylaxis, orthodontia and oral surgery, offers to a limited number of recent dental graduates the opportunity to serve as members of its permanent staff at a salary of \$1,000 per year.

Appointments will be made for one or two years.

Members of this staff will be entitled to the advantages of reports and clinics by experts in the various branches of dentistry, from different parts of the world.

A diploma of service will be issued to each member of this staff who has completed his term to the satisfaction of the trustees.

Successful candidates for positions on this staff will be required to pass the examination of the Massachusetts State Board of Registration in Dentistry.

Applications for the above positions should be made not later than June 4, 1914, to the director, Harold DeW. Cross, D.M.D., No. 149

Tremont Street, Boston, Mass., who will gladly furnish information to those interested.

Permanent Staff, Half Cime Service. Salary \$300 per Year.

The appointments for this service are open to men and women graduates in dentistry, and offer unusual opportunities for clinical work in dental prophylaxis, orthodontia and oral surgery, in the best equipped and most modern institution of its kind in the world.

Appointments will be made for one year as follows:

Half time service, requiring twenty-four hours per week, salary \$300; one-third time service, requiring sixteen hours per week, salary \$100; and will be made subject to satisfying the requirements of the Massachusetts State Board of Registration in Dentistry.

A diploma of service will be issued to those who have completed their term to the satisfaction of the trustees.

Members of this staff will be entitled to the advantages of reports and clinics by experts in the various branches of dentistry, from different parts of the world.

All material and necessary operating instruments will be furnished; up-to-date apparatus, including electric engines, sterile instrument trays, fountain cuspidors, compressed air and modern operating-room-type lavatories will be available for use.

Applications for the above positions should be made not later than June 4, 1914, to the director, Harold DeW. Cross, D.M.D., No. 149 Tremont Street, Boston, Mass., who will gladly furnish information to those interested

Board of Dental Examiners of North Dakota.

The next regular meeting of the North Dakota Board of Dental Examiners will be held in Fargo, N. Dak., July 13, 14, 15 and 16, 1914. All applications for examinations must be in the hands of the secretary by July 3, 1914. For further information apply to

F. A. BRICKER, Secretary.

Fargo, N. Dak.

new Mexico Board of Dental Examiners.

The New Mexico Board of Dental Examiners will meet at Tucumcari, New Mexico, July 6, 1914.

M. J. Moran, Secretary.

Deming, New Mexico.



New Jersey State Dental Society.

The twin cities by the sea (Ocean Grove and Asbury Park) will again entertain the members and guests of the New Jersey State Dental Society. The forty-fourth annual convention of the society will be held in the North End Hotel, Ocean Grove, N. J., on July 15, 16, 17 and 18, 1914, beginning at 10 A. M. on Wednesday, July 15th.

The North End Hotel is one of the largest and finest on the Jersey coast and is situated directly on the beach front at the foot of Wesley Lake and within a moment's walk of the Asbury Park Casino and trolley. Connected with the hotel by a bridge over the board walk is a large pavilion built over the ocean. The second floor of this pavilion will be devoted exclusively to the exhibits and clinics.

Dr. Walter F. Barry, 220 Essex Avenue, Orange, N. J., is chairman of the Exhibit Committee and has made an ideal arrangement of space for the exhibits. Dr. Barry will be glad to furnish information regarding the rates and space still available.

The clinics will be in charge of Dr. James I. Woolverton, 228 W. State Street, Trenton, N. J. Plenty of space will be available so that crowding will be avoided and everyone will have a chance to see the clinics.

The meetings of the society and the reading of papers will take place in the hotel either in the American dining room or in the picture theatre as will be announced in the program, which will be issued about July 1st.

At the hotel end of the bridge a room will be reserved for the officers of the society as headquarters, and this will be the executive office and bureau of information during the convention.

A cordial invitation to attend is extended to all ethical practitioners.

JOHN C. FORSYTH, Secretary.

430 E. State Street, Trenton, N. J.

Idaho Board of Dental Examiners.

The next regular semi-annual meeting of the Idaho Board of Dental Examiners will be held at Boise, Idaho, on Wednesday, July 1, 1914, at 9 A. M., in the State Capitol building. Applications for examination must be made before July 1st. For blanks and further particulars apply to

Dr. A. A. Jessup, Secretary.

Boise, Idaho.

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Colorado State Dental Association.

The Twenty-eighth Annual Meeting of the Colorado State Dental Association will convene at Manitou, Colorado, June 25, 26, 27, 1914. A cordial invitation is extended to all ethical practitioners to attend our meeting.

Clinicians and exhibitors desiring accommodations will please address Dr. E. I. Backus, 719 Exchange Bank Building, Colorado Springs. Colorado. Any other information will be cheerfully furnished by the Secretary.

Dr. Earl W. Spencer, Secretary, Pueblo. Col.

Dr. Geo. Y. Wilson, President, Colorado Springs, Col.

Minnesota State Dental||Association.

The thirty-first annual meeting of the Minnesota State Dental Association will occur in Duluth, August 6, 7 and 8, 1914, at which time the officers of the society unite with the Duluth men in promising a most instructive and enjoyable meeting.

BENJAMIN SANDY, Secretary.

Cexas State Board of Dental Examiners.

The next regular meeting of the Texas State Board of Dental Examiners, for examination of applicants for certificate to practice dentistry in the State of Texas, will be held in Dallas, Texas, June 22, 1914, at the high school building, beginning at 9:00 A. M.

No diplomas recognized, no interchange of licenses with other States. All applications, accompanied by the fee of \$25.00, should be in the hands of the secretary not later than June 17th.

For further information address

C. M. McCauley, Secretary.

Abilene, Texas.

Pennsylvania State Dental Society.

The Forty-sixth Annual Meeting of the Pennsylvania State Dental Society will be held at the Bellevue-Stratford Hotel in Philadelphia on June 30-July 1 and 2, 1914.

LUTHER M. WEAVER, Secretary.

7103 Woodland Avenue, Philadelphia, Pa.